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CLINICAL NOTES OF CASES OF TETANUS.

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IT is with the hope that the following notes may prove of interest to some members of the profession, that I venture to record them.

CASE I.

Traumatic.—Subject, a brown half-bred gelding. Admitted an in-patient on the evening of the 29th October, 1879.

This horse had received a skin wound immediately above the left eye, some little time before he was noticed by the attendant to be incapable of properly masticating his food. The wound was so slight that little notice was taken of it, and no treatment adopted. On the day of admission, the horse was found to present the usual symptoms of a tetanic patient. His jaws, upon force being applied, could be separated to the extent of admitting a finger. There was great rigidity of the muscles of the neck, back, loins, and quarters. He was placed in a darkened loose-box, and tied up by the head, so that he could not lie down. At 7 p.m., Conia, grs. x., were injected subcutaneously. The wound was dressed with Ext. Belladon., and his diet was ordered to consist of gruel and bran mixed, with milk and water as a drink—some of which he was able to swallow.

October 30th.—11.30 a.m. Rather more elevation of tail; other symptoms much as yesterday. Passed fæces once; had partaken of gruel and bran. Injected hypodermically Conia,

grs. xv.; Ext. Belladon. again applied to wound. 7 p.m. Lateral movement of lower jaw more extensive; other symptoms unchanged; still takes food. Injected Conia, grs. xv.

October 31*st.*—12 noon. Movement of neck rather freer; defæcated twice. Injected Conia, grs. xv. 6 p.m. Able to lower head more; pupils dilated. Drank two quarts of gruel. Again injected Conia as before.

November 1*st.*—1 p.m. Movements of jaw, trunk, and limbs less restricted; passed fæces four times. Injected Conia, grs. xv. Ordered a little stewed hay to be given. 6.30 p.m. Muscles a little more relaxed; passed fæces once; had eaten a little stewed hay. Injected Conia, grs. x.

November 2nd.—9.30 a.m. Taken all food given; pulse 48 between paroxysms; sweating a little at flanks; movement quite as free as yesterday, but more general restlessness displayed; defæcated once. Injected Conia, grs. viii. 7.40 p.m. Still more restless, as if anxious to lie down; perspiring freely on neck, behind shoulders, and at flanks; pulse 50; passed fæces once since last seen. Resolved to change treatment, and gave, in a little water to drink, Morph. Acet., grs. v., *cum* Atrop. Sulph., gr. i.

November 3*rd.*—11.15 a.m. Continues to partake of food; defæcated once; sweating decreased; pulse 56. Administered Morphia, grs. v., *c.* Atropia, gr. ss. 6.45 p.m. No fæces; sweating a little at flanks only; able to get his head much lower; breathing still hurried, as if tetanic spasm was affecting chiefly the muscles of respiration; pulse 48. Gave medicine as in morning.

November 4*th.*—10.30 a.m. Still perspiring a little at flanks; no dung; continues to take food; pulse 56. Prescribed Morphia *et* Atropia as yesterday. 7.45 p.m. No fæces; patches of perspiration at flanks; pulse 60. Exhibited Morph. *et* Atrop. as before.

November 5*th.*—Noon. Not passed any fæces; still continues to eat; sweating only a little at flanks; pulse 60. Determined to make a further change of treatment. Prescribed Atropia, gr. ss., Strychrine, gr. i. (dissolved), to be added to a little drinking-water. Same dose was given in the evening.

November 6th.—Symptoms improved; defæcated once in the

night, and again during the day; perspiration entirely ceased; muscles of mastication continue somewhat rigid; moves with greater freedom; pulse 48. Strychnine, gr. i., *c.* Atropia, gr. ss., were administered night and morning.

Under this treatment he continued to progress towards recovery, and on the 10th he was turnèd loose in the box. On the 13th the dose of Strychnine was reduced to half a grain, and from the 15th the medicine was given once daily. He was discovered lying down for the first time on the 16th. Subsequently, restorative doses of Nux Vom. Pulv. were given, mixed with the food, and he was discharged perfectly recovered, on the 28th November.

Co-existent with the tetanic attack there was ophthalmia of the left eye, which set in two or three days after the patient's admission. To what could this condition be ascribed? Could the absorption of the Ext. Belladon. which was applied to the wound immediately above the eye, have been the exciting cause? On the authority of Dr. J. Harley,* it is recorded that Belladonna has been known to cause ophthalmia. I am disinclined to believe that it was so in this instance, and attribute the cause to some remote injury to the optic nerve or internal structures of the eye at the time the wound was received. However, be the cause what it may, the ophthalmia steadily progressed, despite topical remedies, until the whole of the internal structures of the eye became more or less involved, ulceration with rupture of the cornea ensuing; thus permitting the escape of the aqueous humour, which was followed by collapse of the organ and consequent entire loss of vision. The right eye remained perfectly healthy.

In this case, all attempts to ascertain the internal temperature occasioned such severe paroxysms, that they were ultimately discontinued.

Case II.

Sub-acute idiopathic.—On the 22nd October, 1878, my attention was called to a half-bred bay mare, on account of her walking very stiffly. On examination I found that she was suffering from Opisthotonos, with slight trismus. Aloes Barb., ʒvi., were

* Ringer's "Therapeutics," page 365.

immediately administered; she was placed in a darkened loose-box on sawdust, and her shoes were taken off. Her diet was ordered to consist of gruel and bran, with milk and water to drink.

On visiting her next day, I found all the symptoms more fully developed. She had, however, been able to partake of the food given her, and the acts of defæcation and micturition had been performed satisfactorily, though not so frequently as in health. Internal temperature 100·2° F.

24*th.*—Trismus more severe; other symptoms much the same as on previous day. Temperature 100·4°. Determined to try Amyl Nitrite, as this agent had been promulgated by some members of the profession as of value in the treatment of Tetanus, and accordingly I injected hypodermically mms. xxx.

25*th.*—Rather more rigidity of muscles of neck and back; continues to take food; digestive process proceeding tolerably well. Temperature 101·1°. Injected Amyl, mms. xl.

26*th.*—Much the same. Thermometer registered 101°. Again injected Amyl, mms. xl.

27*th.*—Pulse hard and somewhat accelerated. Temperature 100·3°. Little or no change in other symptoms.

28*th.*—Still partaking of food; defæcations not so frequent as on previous days. Temperature 101·1°. Not seeing any beneficial action, but rather the reverse, from the Amyl Nitrite, I almost decided to cease giving it.

29*th.*—Temperature 100·3°. No improvement in other symptoms; discontinued the administration of Amyl. Prescribed Morph. Acet., grs. v., *cum* Atrop. Sulph., gr. ss., to be given in a little drinking-water night and morning.

31*st.*—A little improvement in symptoms. Temperature 99·1°. Continued treatment.

November 2nd.—Temperature 99°. Considerably better. Continued treatment.

4*th.*—Still improving. Temperature 99·3°. Treatment continued.

7*th.*—Much improvement. Prescribed Strychnine, grs. iss., *cum* Atrop. Sulph., gr. ss., to be given once a day.

11*th.*—A little stiffness on walking was the only symptom ob-

servable. Ordered walking exercise. The dose of Strychnia and Atropia was from this date gradually diminished until the 22nd, when further exhibition of medicine was considered unnecessary.

Case III.

Acute idiopathic.—Subject, a brown draught-mare. Saw her for the first time on 18th February, 1878. At 12.30 p.m. found that she could open her mouth to the extent of about two inches; pulse 48; Opisthotonos very apparent. This animal, when in health, was of a highly nervous temperament, and disposed to kick. An attempt to take the temperature *per rectum* caused such severe paroxysms that furthur attempts were not made. She was placed loosely in slings in a darkened loose-box. Injected subcutaneously Atropia, gr. i., and gave instructions for Chloral Hydrate, ʒj., to be added to her drinking-water twice a day. 10.45 p.m. Eyelids drooping; dilatation of nostrils less; able to open mouth three inches; pulse 52.

In the evening partook of very little food and no water, consequently no Choral Hyd. given. Injected Atropia, grs. ii.

19*th.*—1 p.m. Pulse 72; jaws could be separated two inches; dilatation of pupil very great; breathing much accelerated; mucous membranes highly injected; perspiring on neck under the mane; peristaltic action of bowels ceased; tympanitic condition of abdomen; has taken no food. Injected Atropia, grs. ii. 10.45 p.m. Pulse 78; tetanic spasms excessive; perspiration general and great; altogether much worse.

20*th.*—1.45 p.m. Sweating profusely; rigidity of muscles intense; tympany increased; could open mouth one inch; no fæces. Injected Atropia, grs. ii. 8.15 p.m. Died.

In March, 1877, I had a bay agricultural mare suffering from the sub-acute traumatic form; and in February, 1876, an ass, the subject of an acute traumatic attack. Both recovered under treatment by hypodermic injections of Conia, followed by restorative doses of Nux Vom. Pulv.

GLANDERS AND OZŒNA, FARCY AND PYÆMIA.

BY ROBERT WARD, F.R.C.V.S.

(Continued from page 383, vol. ix.)

ON the nature and pathology of Glanders and Farcy much has been written at various times; but with all the research of many eminent pathologists, nothing new has been advanced either in its natural history or indications—physical and therapeutic.

We, therefore, define it to be a disease peculiar to the horse, of a *specific* poisonous character, highly contagious, and readily communicated to man by inoculation. Thus far our present knowledge extends; but it may be in the future, after the barrier between our profession and the sister science has been broken down, that a sound study of comparative pathology may develop itself, and remove the mist which covers so many contagious and infectious diseases among our patients.

This disease, like many others of a serious nature, was for a long time entirely overlooked, and considered to be of a purely local character; hence many attempts were made to find a *remedy*, while its nature was neglected. So that from the days of Hippocrates to the present time almost, but little advance has been made in its etiology. It was thought incommunicable to man; and even at this moment its morbific influence on the human subject is questioned. It appears, however, that Dr. Elliotson has the credit, I believe, of first clearly demonstrating the disease in man, under the term "Equina," and it has been again and again demonstrated; those who may wish to study the phases of the disease as affecting the human subject, I refer to "Holmes's System of Surgery" (2nd edit., vol. i.; Gen. Pathology, pp. 699 *et seq.*; article by A. Polland).

During the present year several deaths have occurred, so that really the lives of human beings are dependent on the veterinary surgeon's correct diagnosis—a most important and serious responsibility.

Ozœna* is the medical name given to Nasal Gleet due to local causes, and is intended as a distinct term for such affection. It should, therefore, never be used by us in connection with cases

* Greek, Ὀζήν, a stench, from the same root as Ozone.

of Nasal Gleet arising from Glanders, for this is decidedly likely to mislead. In this affection we have a foul discharge of purulent matter from the nostrils, generally most offensive, and accompanied with a diseased condition of the bony tissues, as I have explained in the case of the brown blood-cob belonging to the medical firm—this was a case of Ozœna; or it may arise from a chronic inflammatory condition of the lining membrane of the sinuses and nasal passages, as a sequal to protracted catarrhal affections, yielding certain diagnostic signs—for we usually find an enlarged condition of the structures over the seat of disease; and if from dental origin, a careful investigation will lead us to its seat. On this subject the valuable remarks of Professor Varnell are so explicit, that I will not attempt to recapitulate them.

Too much care cannot be bestowed on the digital examination of the facial bones and frontal—lachrymal and maxillary—sinuses, together with percussion; and should we imagine that we have detected the seat of mischief, a small, round-pointed awl may be used at the place as an exploratory instrument. The appearance of the eye on the side affected is also an excellent criterion in our diagnosis.

Although the discharge may in character resemble that of Glanders, still experience will detect that it is not of the same sanguineous, gluey-like adhesive nature, and the pituitary or Schneiderian membrane may show a somewhat characteristic appearance; the ulcer-like sores do not exhibit the ragged chancrous aspect of the true ulcer of Glanders.

Pyæmia, Pyohæmia (Πύον, *pus*; αἷμα, *blood*) are synonymous terms used in pathology to express an abnormal condition of the blood, wherein we have floating among the proper blood-discs pus-globules, a condition frequently resulting from wounds when assuming an unhealthy character after surgical operations; to which surfaces putrid animal or vegetable matter may accidentally come in contact; or it may develop through the poison becoming absorbed through the lungs, or from the alimentary canal, and also follows irregular Strangles.

Four theories have been advanced in explanation of the pathology of this disease, but as my object is to point out

diagnostic symptoms alone, I will not enter upon their discussion, a reference to them being so accessible in our modern text-books.

In this affection the primary symptoms may much resemble an attack of Farcy; but it rarely happens that, in country practice in particular, we are consulted during the existence of these symptoms—the one disease or the other has developed itself markedly on our arrival.

In 1867 I was requested to visit a horse at a large farm. The animal was reported to be labouring under an attack of Farcy, and was very ill. The usual attendant, a country farrier, a respectable man, and the village surgeon had consulted together, and the result of the said consultation was the above report. The farmer said that some twenty years before he had Glanders and Farcy in his stables, and the disease stayed with him some five years—until, in fact, he pulled the old stabling down, and erected new. His sad remembrances made him most anxious about the case. I entered the stable, a well-built brick and slate building, well to look at outside—but inside! Well, there was of dust, dirt, and cobwebs, no end; the floor, of puddled chalk, in deep holes, holding the aqueous and solid excreta of the horses. The only attempt at drainage appeared to be a channel or gutter cut in the surface, but only to be traced here and there in outline; ventilation and light had been omitted of course. There was the patient, standing at the far end, breathing hard and perspiring. When I approached he appeared greatly afraid I should touch him. I found considerable swelling in the groin on the left side, the veins much inflamed, and several pustules studded around the upper part of the hind extremity; the leg was enlarged; under the abdomen, and between the fore extremities were also swellings and corded blood-vessels, with here and there a nodulated pustular-like body forming. The animal could not move without great effort; however, I determined to have the patient transferred to the bull-pen, a large airy box at the end of the building, and whilst this was being done, I asked the history of the patient, which was a fine five-year-old bay cart-horse. It appeared the animal had had a very slight attack of Strangles about a year before, which did not come on as in the other colts, and there was but little discharge from the abscess in the

submaxillary space. The farmer, however, thought the animal was so robust—he had thrown the Strangles off very easily. Everything went well with the horse till mid-winter, when he seemed to go amiss; the head carter considered he had taken a chill, and he was nursed and had some powders. So things went on till he injured himself during the frost, being "roughed," and became very lame on the same leg. The appearance of the pustules formed and forming, the swelling and general symptoms did not to my mind, when I ordered the patient to be moved, lead me to diagnose it as Farcy; for the pustules had not the character of true Farcy buds, and those forming here and there had not the button-like swelling of true Farcy. From the history of the case and these symptoms, I gave my opinion that it was a case of blood-poisoning; that the blood was impure from the suppression of Strangles; and that the exciting cause of its present development was the injury.

Being a valuable young horse, the farmer wished me to treat the case, and he promised to see every order faithfully observed. The animal had lost appetite and spirits. He had already been pretty well "physicked" I found; so I ordered eggs, beef-tea, and stout, much to the farmer's astonishment—the leg to be fomented in a leg-bucket continuously; and I prescribed mineral and vegetable tonics, lanced the ripe pustules, had the box well littered and quilted. I visited the animal every other day for some time; on the fourth day I found a large abscess had formed inside the thigh, which I carefully opened, giving exit to a large quantity of pus: having allowed all I could to escape, I covered some tow with Ung. digest., and inserted it, leaving ointment and tow for daily dressings, with a syringe and carbolic lotion for cleansing the parts daily. For several days it was astonishing the amount of pus that came from the abscess. Finding the discharge so copious, I heated the budding iron—I am a great advocate for the iron as a cautery—and seared up every pustule I could find; this I did effectually.

The patient was discharged to work at the end of three months, gradually recovered health and condition, and was sold after the farmer's death—some three years since—as the best horse on the farm, for more than sixty guineas.

In 1871, whilst attending stock at Mr. E. R.'s, of D. F., the bailiff directed my attention to a pair of nag fillies with immense hard swellings under and around the lower jaw. The pair looked very poor and unthrifty; they had been running at grass in water-meadows. I requested him to tell his employer that the animals had an irregular development of Strangles upon them, and that they should be well housed, fed, and treated, to assist nature, or evil consequences would in all probability ensue at some distant date. I heard no more of the animals till the following spring, when I was requested one Sunday morning to make a long journey to see them. One I found dead on my arrival; the *post-mortem* inspection revealed a large abscess in the abdominal cavity, containing quite half-a-gallon of pus, and characteristic evidence of Phlebitis or Pyæmia.

The other animal was in a most deplorable state. It appeared, however, in her case there had been some discharge from the abscess under the jaw. Blistering, setoning, tonics, stimulants, dietaries of all kinds, with much care and attention, did at last restore this animal to apparently fair health. She was a source of trouble, however, being easily fagged, and at last came under treatment with Laminitis. She so far recovered as to be able to do light work, but I looked on her always as a patient elect for development of Phlebitis, Pyæmia, Pyohæmia, Ichoræmia, or Septicæmia.

It is accepted at this present day that Glanders and Farcy are one and the same disease, and that they are due to a *specific* poison. If this be so, and the disease Pyæmia is correctly described as a septic animal poison, or due to the infiltration of pus-corpuscle into the blood, surely it cannot be right for us to designate Farcy Pyæmia, or *vice versâ*.

Therefore it behoves us to learn the general history of our case, and compare symptoms carefully ere we come to a conclusion, should our diagnosis somewhat baffle us.

The same observations apply in cases of Chronic Nasal Gleet or Ozœna, which, primarily at all events, is a local disease, and not of a specific systemic origin like Glanders.

The modern veterinarian and student have before them the latest researches of English and foreign authorities in those two

excellent works—Williams's "Principles and Practice of Veterinary Medicine," and Fleming's "Manual of Veterinary Sanitary Science and Police." The former devotes some twelve pages to the subject of Glanders, and the latter has some seventy-five pages on the same subject. Mr. Fleming's is, without exception, the most comprehensive natural history of the disease, so far as its nature, diagnosis, and every phase of these affections is concerned. Everything pertaining to Glanders is so clearly exhibited in this work, that it would be supererogatory to enter upon the subject in the pages of the Journal.

Moreover, there is in the pages of the latter the excellent essay read before the Midland Counties Veterinary Medical Association on January 11th, 1876, by Mr. Fleming, to be found in vol. ii. No. ix., pp. 189 *et seq.*, and which should be most attentively read and considered by the student.

The prevalence of this direful disease in England at the present time—and it appears in India also from the report in the December Journal—makes the subject of grave importance. My object has been to offer such suggestions on its diagnosis as occur to me on reading over my "case-diary," and so to excite careful investigation; thus preventing the grave errors in diagnosis which have been reported in the daily papers, and which are so damaging to the profession, as well as to lead the students to apply themselves to clinics and Mr. Atkinson's field of observation.

HEPATIC ABSCESS IN THE HORSE.

BY J. A. NUNN, M.R.C.V.S., ROYAL ARTILLERY, JELLALABAD, AFGHANISTAN.

I SEND the following account of a case of Hepatic Abscess which recently came under my notice. On marching into Jellalabad, on the evening of the 16th of October, I was requested by an officer on General Gough's staff to look at one of his chargers. On inspection I discovered that the animal was suffering from congestion of the liver, with acute Laminitis of all four feet. These conditions I treated by removing the shoes, having poultices applied to the feet, administering fever medicines, and, in

short, all the usual remedies. The animal was a grey Arab stallion, rising six years old, and had been marched from Jhelum to Peshawur—179 miles. He was ridden by his owner from Basawul to Barakhab—twelve miles—on the 10th, when he was noticed to be sluggish and dull, and his dung very offensive. On the 11th he was placed under the care of the "Salootrie," of the Guides Cavalry, who, from what I can make out, treated him with repeated small doses of Tartar Emetic and Calomel; but on this point I cannot be quite certain, as my informant was a Boothan who spoke but very little Hindustani. On the 17th inst. I was requested again to visit the animal, about four p.m., as he had suddenly become very much worse. He was then showing symptoms of abdominal pain; persistently maintaining the recumbent position, groaning, and grinding the teeth. The pulse was seventy-two per minute; bowels relaxed, fæces a bright yellow colour, and having a most offensive odour. On making the horse rise, in order to receive some medicine, I observed a large patch of perspiration on the left side of the body, just behind the last false rib. The animal was very weak and exhausted. I therefore administered an anodyne draught, with half-a-pint of whisky, and had the abdomen fomented. On again visiting the patient at six p.m., he appeared to be free from pain, but was evidently fast sinking. He died at eleven p.m. the same date. *Post-mortem* examination twelve hours after death. On opening the abdomen, a quantity of thick-looking fluid escaped. All the organs were healthy except the liver, which was much congested, and in the *left* lobe of which was the cavity of a recently-burst abscess, which would probably have held a pint of pus. The abdominal cavity contained a quantity of pus mingled with serum. The peritoneum, anteriorly, was somewhat congested. No other lesion could be observed.

A FŒTAL MONSTROSITY.

BY J. WILSON, M.R.C.V.S., NANTWICH.

On Sunday afternoon, October 19th, I was requested to attend a valuable Alderney cow, the property of Wilbraham Tollemache, Esq., of Dorfold Hall. Upon my arrival I found her standing

and straining severely. I was told that she had been attempting to calf since the morning, that the usual "waters" had been discharged early in the forenoon, but that as yet no portion of the calf had been observed by any of the attendants. Upon making a manual exploration, I found that the hind quarters of the fœtus presented, and that it was lying upon its back, with one hind foot directed towards the loins of the cow, while the other was, so to speak, well down in the abdominal cavity. Upon closer examination, I found that the ossa calces of the hocks pointed towards the anterior portion of the uterus, and as no head was to be discovered, I came to the conclusion I had got a malformed fœtus to deal with, and resolved to extract by the hind quarters.

Having, with very little difficulty, succeeded in cording that foot which pointed towards the loins, I next endeavoured to secure the other; but this I found was not to be so easily accomplished, and in consequence of the twisted position of the hocks, and other abnormalities which afterwards showed themselves, I found I was unable to seize it. After making several unsuccessful attempts to do so, I resolved to divide the limb I had already got; and directed the attendant to pull steadily at the cord, in order to bring the leg as well forward as possible. But no sooner had the foot made its appearance, than a large portion of intestine was protruded from the vulva of the cow, and judge of my surprise upon finding that the whole limb, from the hock upwards, was enveloped in an intestinal covering. This at first caused me some alarm, but having satisfied myself that the presence of the intestines was not the result of a rupture of the uterus, I proceeded to disentangle them from the limb, after which I quartered the leg at the hip joint, and removed it in the ordinary manner. Having got rid of this limb, I was now in a more favourable position to secure the other. After several attempts, I succeeded in passing a cord round the hock, slipping it well down towards the fetlock joint. I then directed the attendant to put gentle traction upon the cord; this, as will be observed, produced complete *flexion* of the hock joint. In an ordinary breech presentation it would have caused complete *extension* of that joint. In this position the leg was brought

well forward into the passage, and by a steady pull at a second cord which was fastened to the flexed hock, delivery was effected immediately.

The fœtus now presented the following abnormalities, which fully accounted for the strange and unnatural presentation. There was complete curvature of the spine ; the calf, so to speak, was folded upon itself, from right to left, the hind quarters lying immediately behind the left shoulder, and the points of the hocks inclining toward the head.

The *thorax and abdomen*.—Upon the left side the skin covered the thoracic and abdominal cavities, but the right side was devoid of any cutaneous covering whatever.

The *heart* was placed outside the ribs and pectoral muscles, upon the right side of the chest, and was quite destitute of any covering ; it appeared to be attached to the chest by its blood-vessels.

The *intestines* were outside the skin, to which they appeared to be attached by cellular tissue.

No examination of the thorax, etc., was made, but the specimen was forwarded to the Brown Institution.

The cow had gone about three weeks over the usual time of pregnancy.

[The monstrosity kindly forwarded by our correspondent was exhibited at a meeting of the Central Veterinary Medical Society, and inspected with considerable interest. It proved to be a *Celosomian* monstrosity, or, if we adopt Gurlt's classification, an example of the *Schistocormus* order of monstrosities (*see* "Veterinary Obstetrics," p. 394). It was peculiar, however, from its being a specimen of not only *Schistocormus fissiventralis* but also *fissisternalis*. These are the cases which often startle and baffle the young practitioner, and for the occurrence of which he should be prepared.]

EXTRAORDINARY CASE OF SUPERFŒTATION.

BY RICHMOND KEELE, ESQ., HANGER HILL, EALING.

[The following extraordinary case of what must be considered "Superfœtation," was sent to us by a gentleman of great experience among cattle, whose paper on "Rinderpest in China" appeared in an early volume of the Journal. We can find nothing in veterinary literature to equal the case he so circumstantially describes.]

IN the first place, let me recall myself to your recollection. Some three years or so ago, I wrote to you in reference to the existence of Rinderpest in China; that, however, is not my present topic, but as a remarkable event has happened in my herd of cattle, I thought it might interest you, and perhaps be of sufficient importance for insertion in any future edition of your "Veterinary Obstetrics." I have a cow that, on August 9th last, had a heifer calf, apparently at full time; indeed, so fine a one that I am rearing it. The cow milked well for about a month, and then suddenly lessened the quantity, and shortly ceased to give any. On September 26th she took the bull, and from that time I noticed nothing unusual with her, though constantly seeing her, until December 24th, when she had another calf, a bull, strong and full-sized, and certainly not premature. The calf is now alive and doing well, and the mother is giving as much milk as after any of her previous calvings.

She was running with a bull during last March till April 25th, when the bull was castrated, and she could not have had access to any other till September 26th, when she was seen to be in season, and sent to a neighbour's bull and served.

I think that you will agree with me that it is a most extraordinary case, if it is not altogether unprecedented, and I therefore considered worth calling your attention to it.

RABIES IN KANDAHAR, SOUTHERN AFGHANISTAN.

BY CHARLES CLAYTON, M.R.C.V.S., ROYAL ARTILLERY.

THE case I am about to relate came under my notice in March last. The camp occupied by this force, General Stewart's, was at that time situated about a mile from the city of Kandahar, on some rising ground, protected in the rear by a species of back-

bone ridge of bare hills, separating us from the Argandab Valley The plain around was intersected by dry channels and small ravines, which served as lodgings to innumerable half-starved pariahs, whose howlings at night rendered sleep almost impossible. Unaccustomed to our presence, they at first contented themselves with prowling about the outskirts of the camp, devouring scraps and filth of every description, and in hard times, for want of something better, greedily consuming the flesh of the dead camels to be seen here and there dotted over the *maidan*, their distended carcases barely covered with a few inches of the soft, shifting sandy soil which prevails in this locality. Traces of these mounds are even now to be met with not five hundred yards from the walled-in camp we occupy at this date. Little notice was taken of these roving mongrels until one fine morning, when three chargers, the property of Colonel Hills, V.C., Major Chapman, R.A. and D.A.Q.M.G., and Captain Gaselee, were reported as suffering undoubtedly from Rabies. The late and deeply regretted Veterinary Surgeon Blanchard was called in, and confirmed the statement. One horse died, the others were destroyed. A short time after, a horse, the property of Surgeon Rogers, A.M.D., was destroyed because suffering from the same terrible disease; but in all these cases the period of incubation could not be fixed.

The case I am now about to relate concerns a horse attached to the G Battery, 4th Brigade, Royal Artillery, of which I have had charge since the commencement of operations in this part of Afghanistan. In this instance the period of incubation is correctly fixed. Before I proceed, I may as well state how.

On the 5th March, about 12 o'clock p.m., the stable sentry saw a dog pass through the gun-park, approach No. 5 sub-division, and seize the first horse, No. 21, Stud-bred, by the lower part of the head; immediately the sentry ran towards the spot, but the dog made off, and was not seen again. The wound produced was so slight as to have been completely overlooked, although traces were eventually found of a small cicatrix on the off side, between the two nostrils. The sentry did not think the event worthy of mention until he became aware of the nature of the disease, and saw the isolated horse firmly secured to the wheel of the forge by means of several head or heel-ropes.

The horse, No. 21, above mentioned, was reported off his feed and uneasy, about 9.30 a.m., on the 27th March, 1879. He was first seen by the farrier-sergeant, who thought, from the restlessness he displayed, that it was a simple case of Colic.

On my return to camp from my morning ride, I examined the horse, and was much astonished at the peculiar appearance he presented, not being in possession of any facts which could explain the reason for such a state. The patient was extremely restless; saliva flowed freely from between the partially-closed lips; but general twitching of the muscles of the whole body prevented me from taking the pulse or respirations. The general temperature of the body was very high; the visible mucous membranes highly injected; progression was slow, and locomotion uncertain and difficult, the hind-quarters balancing to and fro even at a very slow walk. The patient moved as a blind horse, hesitating where to place the uplifted feet. Great excitability was manifest; at the slightest noise the ears were carried forward, and the whole of the horse's attention concentrated on what was going on around. The muscular twitching became more marked, amounting almost to trembling of the whole body. Occasionally, and without any perceptible cause, the patient would become more or less disturbed. On water being presented, the muzzle and nearly half the head were eagerly plunged into the liquid, and vain efforts were made to quench the thirst; but deglutition was impossible. Grass was also given, and it was immediately seized with avidity, taken into the mouth, partially masticated, but never swallowed. I had no doubt the case was one of Rabies, and, accordingly, firmly secured the horse to two wheels of the forge by means of many strong head and heel-ropes. No change appeared in the state of the patient until about 10 p.m., when Paraplegia set in. From then until 2 a.m. the horse struggled continuously. He died about the latter hour on the 28th March. I regret that the inclement weather—heavy rain—prevented me from making a *post-mortem* examination. The period of incubation was twenty-three days.

CHRONIC VENTRAL HERNIA IN A HORSE.

BY T. BARKER, M.R.C.V.S., LONDON.

On December 29th I forwarded a parcel, addressed to the Editor of the VETERINARY JOURNAL, at the Brown Institution. It contained a great portion of the off-flank of a brown mare, which I had had killed on the 22nd of that month. The animal, through an accident, had for some time suffered from abdominal hernia. On making a *post-mortem* examination the same night, I found, when the skin was removed, a very small portion of the bowel slightly protruded through the thickened portion of the flank; the external orifice being not larger than would admit my finger. On opening the abdomen I was somewhat surprised to find the bowel twisted, and close to the internal orifice of the late ruptured abdominal wall; the internal orifice, I saw, was much larger than the external. I thought the morbid specimen might interest you, hence I decided upon forwarding it, not attempting to dissect any portion of it, though from the appearance of the external thickened portion of the flank during life and after, I am inclined to think that upon opening up the same, you will find another portion or loop of the bowel running backwards, inside the enlargement, but external to the abdominal wall, I should therefore like you to inform me if such was found to be the fact.

I have enclosed the history of the case. Should you deem it of sufficient interest to be worthy a place in your valuable Journal, you are at perfect liberty to insert it.

On September 30th last I was sent for in haste to a valuable brown carriage mare, six years old, the property of B. M., Esq., of Clarence Gate, Regent's Park, which was said to have had an accident. On my arrival, I found the animal in a very excited tremulous state, and bathed in profuse perspiration. Seeing that the off-side flank was greatly distended and swollen, and judging the nature of the enlargement to be rupture of the abdominal muscles from some cause, on inquiry I was informed by the coachman that he and his groom were in the act of putting the mare in double harness (on the near side) to a waggonette, when by some means she got down on her flank on the roller-bolt of

the splinter-bar of the carriage. On this projecting roller-bolt she lay on her flank for twenty minutes, or more, struggling and twisting about; and from her weight and struggle she had forced this projection through the abdominal muscles, leaving the skin intact at the situation of injury, the coachman and groom doing what they could to induce her to rise, without avail. At last they secured ropes to her legs, got her turned over and freed from the vehicle. It was then noticed by them that the mare's flank was greatly swollen. After such a statement, the nature of her injury was evident. I found her in the condition above-mentioned, and it was with some difficulty I could approach her to examine the extent of injury; for in attempting this she leaned so much towards me, that she almost lost her balance, coming nearly to the ground with her quarters. In the brief examination that could be made, I found a slight superficial skin-wound some distance posterior to the seat of hernia. I may here remark that about six weeks previously I was called upon to examine this mare as to soundness at the time of purchase, and she was then such a very nervous excited animal that it was with difficulty I could do myself justice in the examination of her extremities.

The treatment adopted was as follows: I immediately gave her a draught composed of Aloes Sol. ʒiii., Ol. Lini. ʒvi., Amon. Liq. Acet. ʒii., Opii. Tinct. ʒiv., Ether Chlor. ʒvi. I had then placed on her a harness pad, with crupper and breeching attached, and while this was being done she stood perfectly quiet. A good body-roller was passed round her in the situation of the hernia, bringing the stuffed part of it where required to bear on the part; with a view to get more pressure, I had a pad of tow well saturated in Calendula lotion, and with this I could so far press up the dependent bowel to some extent through the opening in the ruptured muscles, which I found would admit my closed hand. After getting the pad of tow in position, the body-roller was then, at its stuffed part, brought to bear on it by buckling the roller tight, and fixing it in its situation to the crupper and breeching. I ordered the abdomen to be well fomented with cold water twice a day for one hour, and the Calendula lotion to be applied after each fomentation; the animal's head was secured, and sloppy bran, with linseed-tea and

oatmeal gruel alternately, was allowed. The next day the mare was calm but pulseless; bowels not acting freely. Gave, night and morning, for three following days, small doses of Aloes Sol., Ol. Lini, Aconite Tinct. ♏x., Ether Spt. Nit. ʒii., with a view to nauseate her stomach, reduce her appetite and excitability, and keep the bowels gently open, so that we could manage to treat and handle her. For three more days the same medicine was given but once a day; after this, for a week it was given on alternate days, and the fomentation once a day. On my daily visits I saw particularly to the body-roller; I had a leather pad made, suitable to place under the roller, to increase the upward pressure, but she would not bear it. Finding at the end of about three weeks that she showed symptoms of abdominal pains, and the bowels not acting freely, I gave a couple of oleaginous draughts, combined with Opii. Tinct. ʒii., Ether Spt. Nit. ʒii.; removed the harness, with roller, and released her head. The pain and excitability soon subsided; the swelling and enlargement caused by the bowels was greatly reduced. I was pleased at this time to find the orifice in the ruptured muscles was also much diminished; the bowels could be easily pressed upwards into the abdomen. After allowing her three days' liberty and rest, the harness and roller were replaced, and the pressure from it gently applied for a week longer, then dispensed with. She was now allowed freedom in the stall, and food as before, with a small allowance of chaff; she was also transferred to a loose box, where she continued until December 22nd. She having, between September 24th and December 21st, two attacks of abdominal pain, I found that one or two oleaginous draughts gave relief; but an attack on the 21st-22nd of that month was so severe that it was decided to have her killed. When in attendance on the animal, I often noticed a gurgling noise caused by the action of the bowel at the seat of injury.

[This case of traumatic abdominal hernia owes its interest to the fact that the transverse and internal oblique muscles having been lacerated, the intestine found its way through the opening, and formed a sac between the two oblique muscles of the abdomen. The process of repair had left only a small aperture for the passage of the intestine, which at times was compressed by

the constriction, and consequently gave rise to the symptoms of abdominal pain. The knuckle of intestine between the layers of muscles was not large, but the portion immediately in connection with it within the abdomen was so dilated as to work like a small stomach; this portion, as well as the mesentery belonging to it, had undergone adhesive inflammation, and was greatly thickened.]

HORSE-POX, OR STOMATITIS PUSTULOSA CONTAGIOSA.

BY GEORGE FLEMING, F.R.C.V.S., ARMY VETERINARY INSPECTOR.

THE great interest which attaches at present to the variolous and varioloid diseases of animals, in connection with animal vaccination, renders it something in the nature of a duty for those who have had the opportunity of observing these maladies, to publish their observations, as a contribution towards the solution of some important points in connection with them. For if a recent discussion among vaccinators and others be taken as evidence of our present knowledge of Variola among animals, it must be confessed that this knowledge is meagre and confusing in the extreme, and shows an amount of ignorance of comparative pathology, which we could scarcely credit, great though we previously knew that ignorance to be. The only creatures admitted to be liable to Variola in that discussion, were man and the sheep; merely, it appeared, because the speakers, from their limited experience, had only seen these two creatures affected with a variolous disease *sui generis*. If we are to believe in the existence of what we only, individually, see, it is to be feared that the knowledge of even those gifted with the keenest vision and the most highly-trained faculty of observation, would be extremely limited, while the blind would be totally and hopelessly ignorant of everything. To assert that only mankind and sheep have a Variola peculiar to themselves, and to throw discredit upon the statements of most competent observers who have witnessed other species affected with variolous disorders, which had not been communicated from man or the sheep, requires an amount of courage which many would be inclined to call blind temerity.

I do not intend at present to discuss the variolous disorders of any animal except the horse; and as I can treat of the subject from personal experience, I shall confine myself to a simple enumeration of facts as they presented themselves.

The history of the disease possesses much interest, from the fact that Jenner, the introducer of vaccination, attributed Vaccinia in the cow to infection from horses suffering from it; though from one of the symptoms which often accompanies it, he thought it was the more common equine disorder known as "Grease." Horse-pox is transmissible to the cow and other animals, as well as to man, and it gives rise to a localised eruption identical with that of Cow-pox; successful inoculation with the virus will protect man from Small-pox, and the horse and cow from their Variolæ. Dr. Loy, of Pickering, described it in 1801, but in consequence of its existence being denied in this country, it has escaped notice nearly altogether, and appears to be only known to a very few veterinarians.

On the Continent careful search was made for it, but it was not really until 1860, when a notable outbreak occurred among cavalry horses at Rieumes, near Toulouse, that it was fixed upon. Sarrans and Lafosse studied it carefully, and they had ample opportunity, as it attacked more than one hundred horses in three weeks. Lafosse successfully inoculated several cows and children; he named it the *Maladie Pustuleuse Vaccinogène* of the horse. Subsequently it was described by Dard as the *Rhinite Pemphygoide;* and Bouley made a most exhaustive inquiry into its nature, at Alfort, in 1863 and 1864. At that time it was very prevalent about Paris, and its inoculability from horses to other animals, and to mankind, was abundantly demonstrated. Bouley at first designated it *Stomatite Aphtheuse*, then *Herpès Phlyctenoïde;* but at last recognising its true character, he named it, after Loy, the *Horse-pox.*

In the VETERINARY JOURNAL (vol. v., p. 81), Professor McEachran, of Montreal, published a most interesting account of an outbreak of Horse-pox in that city, and alluded to successful inoculations of cattle, and to several people having become accidentally inoculated with the contagium of the disease. In a more recent issue of the Journal (vol. vii., p. 293), there is a

translation of an excellent article from the pen of Ellenberger, and which appeared in the *Archiv für Wissenschaftliche, etc., Thierheilkunde.* In that article the malady is designated *Stomatitis Pustulosa Contagiosa,* and its ready communicability to other horses and to mankind is also shown. In the same Journal (vol. vii., p. 371), Army Inspecting Veterinary Surgeon Owles reports an outbreak of the disease at Aldershot, in January and February, 1871. The rarity of the malady may be judged of from the fact, that Mr. Owles, during thirty years' experience among army horses, had only seen it twice, and was particularly struck with its peculiar features. In the same Journal for September, 1879 (vol. ix., p. 204), reference is made to an outbreak of Horse-pox in France, which derived its interest from the fact that a number of unvaccinated soldiers were successfully inoculated from the pustules ; calves were also successfully inoculated, and from them people were vaccinated.

In a recent number of the *Deutsche Zeitschrift für Thiermedicin,* Professor Friedberger, of the Munich Veterinary School by the same title given to it by the Berlin teachers, furnishes a description of the disease, and relates the results of experiments. I intend to publish a translation of Friedberger's excellent paper at an early opportunity.

In addition to all this evidence, Continental veterinary literature, and especially French, contains many references to the disease, as it has been seen by some of the ablest veterinarians ; and in "Veterinary Sanitary Science and Police" (vol. ii., p. 73), because of its great contagiousness, a section was devoted to it.

The malady, as has just been remarked, appears to be extremely infrequent, for until the cases I am about to describe occurred last September, I had not seen it, notwithstanding the large numbers of horses I have had under observation and treatment during twenty-five years. I may here remark that Professor Trasbot, of the Alfort Veterinary School, in a series of papers just completed in the *Archives Vétérinaires,* contends that the common disease of young horses, "Strangles," is nothing more or less than Variola, and he counsels inoculation as a protective measure. I have no desire to controvert the opinions of such an excellent authority in veterinary pathology as Trasbot, but I

may, nevertheless, state that I have never witnessed, in the very many cases of "Strangles" which have come under my care, anything at all resembling this disease; and I am compelled to maintain that "Strangles," and the disorder under consideration, are two dissimilar and distinct maladies.

With regard to the German designation of "Stomatitis Pustulosa Contagiosa," I confess it is not quite correct, as the disease is not confined solely to the mouth in any instance, and in some cases it appears as a more or less general eruption over the body and limbs.

Now for my own experience of the malady.

Towards the end of August, 1879, a small number of remount horses joined my regiment at Windsor; they were apparently in good health, and none of them were under four, nor more than five years of age. There was no disease among the other horses in barracks. A few days after they were located in the remount stable, one of the horses (a four-year-old gelding) was reported as having a sore place between the ears, about the junction of the mane and fore-lock. The hair was matted by encrusted discharge, and this being clipped away, a somewhat raw surface, about the size of a shilling, was discovered. This appeared to have been a very minute abscess or group of pustules, which had been broken and abraded by the head-stallof the head-collar and bridle. It was so trifling, that merely cleansing with warm water and keeping off pressure were prescribed. A thin purulent discharge was noticed for two or three days, when the sore became crusted over and healed. About the same time, the trooper who attended to the horse thought it did not masticate its hay so freely as it should, and on September 4th it was observed that the angles of the mouth were swollen and sore. On the 5th the horse was brought into the hospital stables. Its appearance was then very startling. The lower part of the face—nostrils, lips, and particularly the angles of the mouth—was so much tumefied, as to make the animal somewhat resemble a hippopotamus. Saliva flowed from the mouth, and the commissures were covered with a dirty-yellow pus. The swelling was tense and hot, the thin black skin being smooth and glistening. On opening the lips, the inner surface

of these, as well as the gums, was found to be covered with vesicles of various sizes; these were both discrete and confluent, the latter forming irregular-shaped patches more or less ulcerated or abraded. The unbroken vesicles were generally acuminated, had a pearly-white aspect, with an inflamed areola, and varied in size from the dimensions of a millet-seed to that of a pea. Their contents were rather solid than fluid, and when removed a rather deep concave depression remained. There were a few vesicles on the floor of the mouth, and some on the skin of the lips. These latter were much larger than those inside the lips. There was very slight fever, the appetite was but little impaired, and sloppy food was freely eaten. An astringent gargle, composed of alum, was ordered. On the 6th there was no change, but on the 7th there was an eruption of nodules and pustules over the body. The nodules felt like duck-shot, and the pustules were covered with a dark brown crust. The mouth was very sore, a quantity of thick, ropy saliva continually flowing from it. Fresh crops of vesico-pustules had appeared on the lips and gums, and the tongue towards the frænum was involved. The submaxillary glands were somewhat swollen. The temperature was 101.1°; the respirations and pulse were normal. On the 9th the tongue was much affected, especially towards its sides. The horse experienced great difficulty in eating, though the sores on the gums and lips were healing. Dry, dark-brown crusts were common over the body. From this date to the 12th there was very little amendment in the condition of the horse, but convalescence now set in, and recovery was complete on the 18th.

On the 11th of the same month another horse was admitted as affected with this disease. This animal (a mare) had joined the regiment nearly a year before as a three-year-old; it stood in quite a remote part of the barracks, altogether away from the remount stable, and had never been in contact with the young horses. This circumstance, and the more serious character of the malady in this animal, occasioned some alarm, as it was feared an extensive outbreak was about to take place among the troop horses. Believing the disease to be contagious, I was at first in great difficulty with regard to accounting for its

appearance in a distant stable, until, on a searching investigation, I found that this horse's bridle having been broken and sent to the saddler for repair, the trooper surreptitiously removed the other horse's bridle from the remount stable, as it was not in use, and wore it on this horse for a day or two. This furnishes a very striking proof of the contagiousness of the disorder.

In this horse there was swelling of the lips, the commissures of which were very prominent, tense, hot, and painful. The vesiculo-pustular eruption was most marked on the chin, around the margin of the lips, on their inner surface, and on the gums. The sides of the tongue, the fræum, and the floor of the mouth were also irregularly studded with the vesicles, and there were even two or three on the dorsum of the tongue. The submaxillary glands were tumefied and painful, but there was no indication of abscess. Ropy saliva flowed from the mouth, and attempts at masticating hay evidently gave rise to much pain; though the appetite did not appear to be much impaired. There was slight cough. The temperature on admission was 102.2°, pulse 44, respirations normal. On the 12th, the mouth and face eruption had a still more striking appearance. The animal's coat stared as if from cold, though the surface temperature was good. Several clusters of vesicles in the mouth had become confluent, producing sores varying in size from that of a threepenny piece to a sixpence. The lower part of the face and the submaxillary glands were more swollen. Average temperature 102.1°, pulse 44. On the 13th the animal was very dull and had no appetite, and the respirations, though not increased in number, were deeper than usual. The nostrils were so much swollen that the breathing was noisy. Patches of vesicles on the sides of the tongue and floor of the mouth had coalesced, and formed somewhat deepirregular sores; salivation rather profuse. Average temperature 103°. On the 14th, the entire face was swollen, and there were vesicles not only at the entrance to the nostrils, but high up on the Schneiderian membrane. Around the muzzle and on the side of the face, there were vesicles, or rather pustules (for on the skin they were the latter, while on the mucous membranes they were the former); and under the right eye they were numerous and inclined to be confluent. The

mouth presented somewhat the same appearance as on the 13th. Temperature 103°, pulse 48. Next day the temperature was lower (102.1°) and the pulse 40, but the coat was lustreless and erect, and there were occasional rigors. The mouth was in the same condition. The majority of the pustules on the face and lips were now covered by thick brown crusts. On the left hip and on each side of the withers was a somewhat large suppurating sore, which appears to have been due to confluence of several pustules. The discharge was thin and of a yellowish-brown hue. On the 16th, the commissures of the mouth, which had been discharging the thin dirty-yellow looking pus, are now covered by brown crusts, as well as the place on the hip and left side of the withers; that on the right side is still discharging. 17th.—The horse is better, and in consequence of the improvement in the condition of the mouth, is able to masticate a little hay. Pustules have appeared in various parts of the body, and some are present on the fore-limbs, immediately above the knees Temperature 100.2°, pulse 40.

From this date the return to health was gradual. The sores on the gums and in the mouth slowly healed, those on the sides of the tongue being large, and presenting a very peculiar appearance. The crusts fell from the parts where the pustules had been, and on the chin and margin of the lips the cicatrices had a most remarkable and characteristic aspect. Where each crust had been there was now a deep depression, the bottom of which could not be seen, owing to the retraction of the margin; and around this hole or "pit," the skin—formerly black—had lost its pigment, and offered a narrow white ring—in fact, there was the same appearance, though in a highly exaggerated form, that is seen in the recent "pock-pit" of the negro. This pitting was observed in the previous case, though it was not nearly so marked; in the following case it was still more conspicuous.

This case was a cryptorchid horse, five years old, which had been operated upon for removal of the concealed testicle on September 15th. Everything appeared to be going on favourably, the wound was suppurating, and the swelling was comparatively trifling. There was no general disturbance of health. The horse stood in a loose box at the end of the hospital stable, and had

never been in direct contact with the foregoing cases. On the 22nd, there was much tumefaction of the prepuce, and the hind limbs were swollen without any assignable cause; this swelling had not been noticed the previous day. On the 23rd there were a number of large papular-like pustules, about the size of a three-penny or fourpenny piece on the prepuce, which was yet more swollen; the horse moved stiffly on the hind legs. The temperature was 103°; pulse 52; respirations 16. 24th.—Some of the pustules on the prepuce were crusted, the crusts being very dark brown. Inside the left thigh were four large nodules; these and the preputial eruption might have been mistaken for Farcy. The knees were swollen, and a number of smaller pustules or papules were apparent on their inner and outer surface. On the front of the right anterior coronet was a large discharging patch, exactly like that seen on the top of the head of Case 1. The hair stood erect and bristly on this patch, which was about the size of a five-shilling-piece, and the fluid covering it was very thin and of a dirty yellow tint. The lower part of the face was swollen, and there were four comparatively large crusts on the lower lip. These crusts were dark-coloured, and offered a character not observed in the other horses—they were slightly umbilicated. There were about a dozen nodules and pustules on the upper lip—some of the latter being more or less crusted. Inside the lips and on the gums there were not more than half-a-dozen very diminutive opalescent vescicles. The temperature had fallen to 101°, and the pulse and respiration were nearly normal. The thigh nodules were crusted. The general health appeared to be very little affected. On the 25th the under lip presented a still more characteristic appearance. The moist patch on the fore limb was drying; but another has appeared on the front of the pastern of the near hind leg. The temperature was 100.2°. The crusts had fallen or been rubbed off the lower lip on the 26th, leaving quite deep pits.

The case continued to run its course like the others, and on October 4th the horse was reported as well,

This horse had not been in contact with any of the others, being kept confined to its box after the surgical operation. The only way, it was surmised, in which the infection could have

been conveyed, was through the medium of the stablemen, drinking out of the same bucket, or using the same sponge to clean the wounds which had been employed about the mouth or nostrils of the other horses. I think the latter the most probable mode of infection, from the fact that the eruption was first noticed in the vicinity of the scrotal wound.

Accidental transmission of the disease to mankind.

My farrier-major, thirty-four years of age, attended upon and dressed the mouth of Case 1 from the time of its admission to hospital. On or about the morning of the 5th of September, while washing his hands, he made a small scratch on the inner side of the third finger of the right hand, where the skin is very thin. On the 8th he noticed a small "fester," as he termed it, over a little white spot which had appeared at the corner of the scratch. He did not think anything of this until the following day, when it began to be somewhat painful and swollen around the scratch, and these symptoms increased until the morning of the 12th, when he suffered so much that he was compelled to go to the hospital. Surgeon Hensman, 2nd Life Guards, saw him, and to him I am indebted for the following medical report of the case:—

The finger was swollen, there was a thin, light-coloured scab over the scratch, and a thin, lymph-like fluid exuding from under and between it. There was no swelling of wrist or arm or affection of the lymphatics. He placed a piece of wet lint over it merely to keep it clean. General health at the time very good. On the 13th another horse suffering from the disease was admitted. This was reported as a more severe case. The farrier-major treated and handled this animal as he did the last, regardless of his finger. He experienced nothing unusual from doing so until the 19th, on which day, at bed-time, the hand commenced to swell, red lines appearing up the arm along the course of the lymphatics, while the axillary glands became very sore indeed, though not perceptibly swollen. On the morning of the 20th he reported himself to me (Dr. Hensman) at hospital. The finger, back of hand and wrist, and fore-arm, were then much swollen; the wound was covered with a kind of moist lymphatic exudation; the scab was of a dark-brown

colour; pressure gave pain, but caused no exudation of pus—a little oozing of lymph only. Altogether, the appearance of the finger was very much like that of modified Vaccinia. He had lost his appetite, and complained of slight feverishness. His tongue was fairly clean and pulse normal. Gave tonic medicine, and as the finger looked very angry and inflamed, I told him to bathe it with warm water.

I saw him again on the 21st. Everything was much the same, except that he stated he felt occasional rigors, followed by flushes of heat. He remained in the same condition until the 23rd, when the swelling was decreasing. There was no soreness in the axilla or down the arm; the red lines had disappeared, leaving a yellowish stain in the skin, most marked over the biceps muscle. No febrile symptoms, but no appetite. The appearance of the sore is very like modified Vaccinia, accompanied by much swelling and inflammation. Lymph still exudes, and there is no appearance of any pus. 24th.—No change in sore, finger hard and brawny. States that he feels much better, and his appetite improved. The conjunctivæ looked slightly yellow. Poultice the finger. 26th.—Slowly improving. Hand not nearly so sore, the swelling subsiding at night, back of hand softer, but finger still much swollen and hard. 29th.—Finger getting smaller, but appearance very much the same—unhealthy-looking, and covered with a dark-brown slough. Continue poultice. 30th.—Slough and scab commencing to come away. Entire size of scab 1 by $\frac{3}{4}$ inch. Finger still swollen, and itching continues around the edge of the wound. Granulations exposed are large, somewhat pale and flabby, and bathed with healthy pus. October 1st.—More slough and crust have come away. Granulations healthier, wound clean, no pain, itching less.

From this time the wound was treated as a simple sore, and gradually healed.

Such is an outline of the farrier-major's case as given by the regimental surgeon. I may add that the man had been seventeen years in the regiment, and on joining, an unsuccessful attempt had been made to vaccinate him. He appears to have been successfully vaccinated when an infant, as he bore well-

marked traces of the operation. From what I personally saw of him and the finger, I was deeply impressed with the analogy, if not absolute identity, of the case to that of ordinary vaccination in a somewhat severe form.

BLOODLESS OPERATIONS IN VETERINARY SURGERY.

BY F. SMITH, M.R.C.V.S., ROYAL HORSE ARTILLERY, INDIA.

As the bloodless method of operating plays such an important part in human surgery at the present day, I determined to give it a trial in the horse; and having occasion to perform Neurotomy, I looked upon this as an excellent opportunity for the experiment. My patient being cast, I proceeded to bandage the limb tightly upwards from the coronet, and having got above the knee, I cut off the supply of blood by pressure on the "radial" artery. As I had no tourniquet, I improvised one of very stout tape, passed round the limb four or five times, and tightened by means of a stick passed between it and the leg, and by turning which the requisite pressure could be brought to bear on the artery. My bandage was then removed, and I proceeded to operate. The supply of blood had been so completely cut off, that it seemed like operating on the dead subject—*not one drop of blood was lost* until the operation was over, and then but very little. I look upon this as a very important point gained, as no staining of the tissues takes place, consequently there is no difficulty in finding the nerve; and any one, like myself, who has divided a small branch of a vein or artery in exposing it, and has had to flounder about with a needle in search of it, can fully appreciate the bloodless method. I strongly recommend it for all operations on the limbs where hæmorrhage would interfere with their due performance.

An Esmarch's bandage is really the proper thing to use for emptying the limb, and then a stout piece of indiarubber is wound tightly around the leg above this, and tied, and this cuts off the supply of blood.

THE PATHOLOGICAL HISTOLOGY OF EPIZOÖTIC PLEURO-PNEUMONIA.

BY CHARLES S. ROY, M.D. LONDON, ASSISTANT AT THE PHYSIOLOGICAL INSTITUTE OF THE UNIVERSITY OF STRASSBURG.

(*Continued from page* 20.)

WE now come to the description of the morbid changes which are found in the alveolar substance proper. The characters presented by this tissue vary greatly at different parts of the diseased mass, under the influence of causes which in some cases escape even the most careful investigation; whilst in others, the variations in appearance are manifestly due to the stage to which the morbid process has attained, or to the varying degree of organization or degeneration which the exuded cell-elements have undergone.

At the edge of the affected part there is often some degree of capillary congestion. This is rarely, however, a marked feature, which is only what might be anticipated, seeing that the rich liquid and solidified exudation must necessarily raise considerably the extra-capillary pressure, so that, on the blood-pressure within the capillaries falling with the death of the animal, the blood will be forced out of the vessels. It is probably on this account that the diseased tissue, even near the margin of the affected part, not infrequently appears anæmic.

The air within the alveolar cavities is at first replaced by the thick fluid, rich in albumen, which has been repeatedly referred to, and which disappears during the process of hardening the specimen for the purpose of cutting sections. At this early stage, the walls of the alveoli show little change beyond some swelling of the contained nuclei and of the epithelial cells with which they are more or less completely lined.

In the deeper parts of the affected mass, we find the alveoli filled with coagulated matter, which varies in character at different places. At some parts the air-cells are occupied by typical fibrinous coagula, in the meshes of which are seen a few scattered leucocytes and red blood-corpuscles, while the walls present no striking change in appearance; the characters of the

tissue, in short, are those found in the stage of red hepatisation of Croupous Pneumonia of the human lung.

At other parts, again, of the same lung, the contents of the alveoli may be composed almost entirely of cell-elements, which are usually partly epithelial and in part young cells containing a varying number of nuclei. At some places, the epithelial, or it is perhaps better to call them epithelioid, cells predominate along with a number of granules of varying size ; at other parts again, only lymphoid cells are found, which may be either closely packed together and filling up the cavity of the alveolus, or which may be more or less thickly scattered through a finely molecular substance. Or, again, the cavities of the alveoli may contain little else than this finely molecular matter, scattered through whose substance, however, there are usually one or two epithelioid cells or leucocytes. Between these different appearances all varieties of intermediary conditions are encountered.

The walls of the alveoli and infundibula are also affected in a different manner, and to a varying degree, at different parts. They retain occasionally an almost normal appearance, while elsewhere, on the other hand, they may be greatly thickened, and their interstices flooded with lymphoid cells. As a general rule, they are found somewhat thickened with a moderate number of young cells scattered through their substance.

Figs. IV., V., and VI., represent the appearances which are most commonly encountered in the histological examination of the alveolar tissue. Of these three, that condition which is illustrated by fig. VI. is, perhaps, the one which is most frequently met with.

Sometimes the walls of the alveoli are found covered with a continuous layer of epithelial cells, as is represented in fig. VII. ; more rarely, this layer is double, two rows of cells being seen (when the wall is seen in section) superposed, and still to all appearance firmly attached to the alveolar wall. At other parts, the wall of the air-cell or infundibulum is thickened by the growth in its substance of connective tissue, as in pulmonary Cirrhosis. Elsewhere, again, a condition of considerable interest is met with, in which the alveolar and infundibular septa are

thickened by strong bands, composed entirely, or almost entirely, of smooth muscular fibres, which can be readily recognised from their characteristic staff-shaped nuclei. Fig. VII. is intended to illustrate this condition.

It is only within recent years that attention has been called to the fact that the lung of man, as well as of most of the domestic animals, contains unstriped muscular fibres in the septa of the alveolar tissue. So far as I can learn, Rindfleisch* was the first to demonstrate the existence of such fibres in the parenchyma of the normal lung, and their hypertrophy in certain morbid conditions. He describes loop-like bundles of muscular fibres proceeding from the bronchioles at their point of entrance into the infundibula, and extending along the walls of the latter as far as their fundus, while at right angles to these loops, and running round the infundibula, are from two to four ring-shaped muscular bands lying in those alveolar septa which project furthest into the infundibular cavity. These bands he found hypertrophied in cases of the so-called "brown induration." These observations were confirmed by Stirling, Orth,† and by Buhl,‡ the latter of whom, in that form of Cirrhosis which results from desquamative Pneumonia, found a hypertrophy of the muscular bands in question. In some cases, indeed, he found the muscular elements so greatly predominating as to justify the term "muscular Cirrhosis," which he applied to the condition. Rindfleisch,§ on the other hand, found no increase of the muscular fibres of the pulmonary parenchyma in the cases of chronic desquamative Pneumonia which he examined. In various domestic animals, more especially in the lung of the cat, Eberth‖ found a very marked increase in the muscular fibres of the infundibular septa, both in simple chronic Pneumonia, and in those

* Rindfleisch, "Die Muskulatur der kleinen Bronchien und des Lungenparenchyma," *Centralblatt*, 1872, s. 65.

† Orth, "Zur Kenntniss der braunen Indurationen der Lunge," in *Virch. Arch.*, Band lviii.

‡ Buhl, *Lungenentzündung*, 2te Auflage, s. 58, 1873.

§ Rindfleisch, "Die chronische Lungentuberculose," *Arch. für klin. Med.*, Band xiii., 1874.

‖ Eberth, "Ueber Hyperplasie der Muskeln des Lungenparenchyma," *Virch. Arch.*, Jan., 1878.

forms which result from the presence of various parasites. We cannot, therefore, lay much weight on the presence of this muscular hypertrophy in cases of Pleuro-pneumonia, in which its occurrence is not rare; for it would seem that, in various chronic inflammatory processes affecting the lung, it has only to be carefully sought for in order to be demonstrated.

In those parts of the diseased tissue which present the characters of what has been called the *third stage*, the morbid changes found in the alveolar substance are, with some exceptions, fairly uniform. Here the air-cells are occluded by coagulated fibrinous or molecular matter which adheres firmly to their walls, and through which are scattered here and there a varying number of leucocytes and epithelioid cells. These cells are either partially broken down, or present an unchanged outline; but both they and the tissues forming the alveolar walls are characterised by their dull appearance, and by the imperfect degree to which their nuclei can be stained with hæmatoxylin or carmine. There is no disintegration of the tissue, but the often ragged outline of the alveolar septa, and the peculiar molecular change which they have undergone, and which gives the whole section a dull uniformity of character, form an *ensemble* which is strikingly in contrast with the appearances seen on examining sections taken from parts in the *second stage* of the morbid process. It requires no great histological experience to be able to tell at the first glance that the tissue in this condition has become necrosed.

In the dark-red hæmorrhagic parts, except that the capillaries are distended with red blood-corpuscles, and that a large number of these are found within the alveolar spaces, the characters of tissue are the same as those found in other parts of the affected mass.

The irregularity of the boundary line between the healthy and the diseased lung-tissue is, as has been said, due in part to the presence of pointed process, or extensions of the disease into the limits of otherwise unaffected regions of the lung. These extensions outwards of the exudation vary in shape and length in different cases and at different parts (in one case the morbid process could be traced stretching without interruption from the

posterior lobe, where the disease proper was situated, as far as the retrobronchial glands); but they have this in common, that they occupy the perivascular and peribronchial connective tissue, and point, therefore, towards the root of the lung. Such processes are never found extending under the pleura for any distance, as we might expect were the course of the lymphatics of the bovine lung the same as that which they take in man. This tendency to spread along the lymphatics is one of the characters wherein the disease in question differs from simple Pneumonic processes.

The exudation found surrounding the vessels, both beyond the general margin of the diseased mass as well as within its limits, is very uniform in its characters in different cases, and differs in no important particulars from the interlobular exudation, so that its description need not detain us further. The degree, however, to which the blood-vessels themselves and the bronchial branches are affected requires some notice, as it varies much at different parts.

The musculosa and intima of the vessels are often found altogether unchanged in appearance, and this although the adventitia be much infiltrated and swollen with the exuded material. In rarer instances, the middle and inner coats are found containing numerous cell-elements in their substance, and sometimes fibrinous coagula are seen between the deeper layers of the inner coat; the swelling, however, resulting from the presence of this fibrinous exudation is never, so far as I have observed, great in amount. Where the intima is deeply affected it is not rare to find the endothelial lining of the vessel replaced by a layer of young cells, and not unfrequently three or four such layers may be seen. This latter condition is represented in fig. VIII. This is what is almost invariably found in those vessels which pass to the hæmorrhagic parts, at some point or other of their course, and the situation of which is easily discovered from the presence, at the affected part of the vessel, of a firm clot occupying and more or less completely occluding its lumen. It is scarcely necessary to add, that the clot in such cases most probably resulted from the diseased condition of the inner wall and especially from the affection of the endothelial lining.

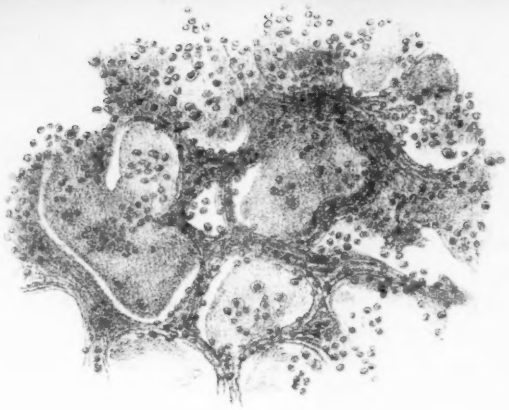

Fig. IV.

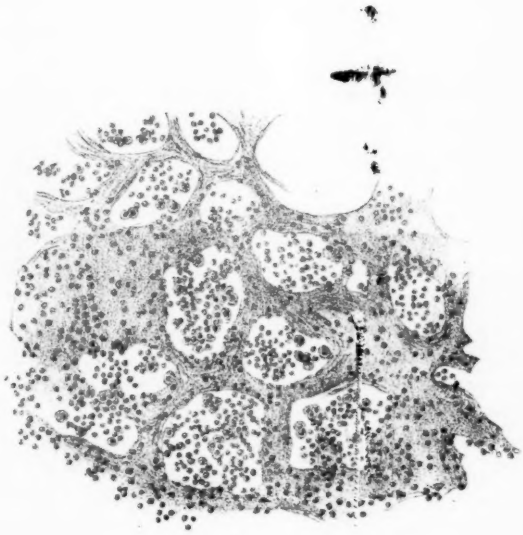

Fig. V.

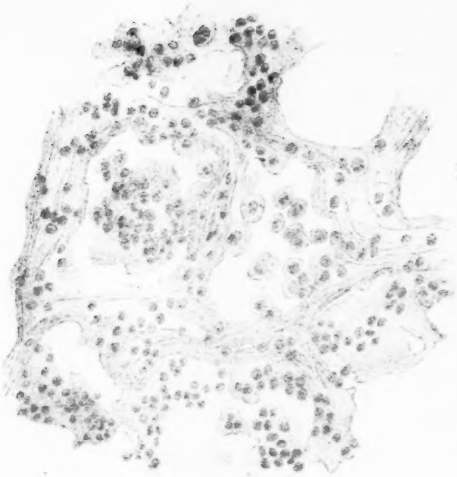

Fig. VI.

Fig. VII

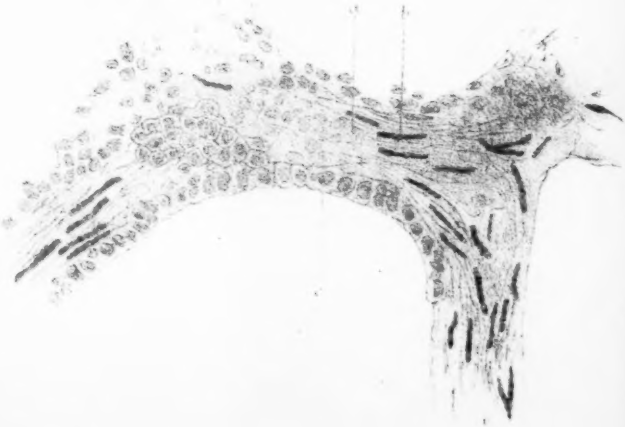

Fig. VIII

EXPLANATION OF THE FIGURES.

FIG. IV.—Condensed alveolar tissue. (Obj. No. vii. Hartnack. Oc. No. iii.)

FIG. V.— Do. do. (Obj. No. vii. Hartnack. Oc. No. ii.)

FIG. VI.— Do. do. (Obj. No. vii. Hartnack. Oc. No. iii. tube drawn out.)

FIG. VII.—Portion alveolar septum, *a*, containing (*b*) newly-formed smooth muscle-fibres, and covered at some parts (*c*) with a continuous layer of epithelial cells. (Obj. No. viii. Hartnack. Oc. No. ii., tube drawn out.)

FIG. VIII.—Vertical section from the wall of branch of the pulmonary artery, showing the endothelium replaced by young cells. (Obj. vii. Hartnack. Oc. No. ii.)

(*To be continued.*)

Editorial.

THE ARMY VETERINARY DEPARTMENT AND THE ZULU WAR.

IT cannot be concealed that perhaps never at any period in the history of the Army Veterinary Department has there been more dissatisfaction prevailing, to use the mildest term, than during the last month.

As is well known, since the accession of the present Principal to the head of the veterinary service, great changes have been made; more life has been infused into it; mere seniority has not been looked upon as a sufficient claim to promotion; the qualifications of candidates for admission to the department have been most carefully examined and rigidly tested; and we believe everything has been done that man can do, under the circumstances, to give this section of Her Majesty's army an amount of efficiency, honourable feeling, and a degree of *esprit* which it never before possessed. In every corps to which members of our profession are attached, it is readily and generously admitted that the veterinary surgeons are a most useful, obliging, popular, and zealous body, and not a whit less scrupulous in conduct or gentlemanly behaviour than their brother officers. The first occasion on which the new order of affairs was really put to the test was the outbreak of the Zulu war. The efficiency of the Department was suddenly subjected to a severe strain. Shipload after shipload of horses, ready for active service, left our shores on the longest sea voyage our mounted corps had perhaps ever made; and the success with which they were carried to South Africa was largely due to the veterinary surgeons on board, whose able efforts in maintaining the health and efficiency of the horses in their charge elicited the warmest praise from commanding officers and others. The losses were astoundingly small, and the corps were disembarked at Durban in almost as good condition for the urgent work before them as if they had just left their troop stables at home. It was the same in the field. The veterinary surgeons shared the hardships

and dangers of their brother officers, and exerted themselves to the utmost to discharge their oftentimes most exacting and harassing duties. They hoped and felt that, with the changed aspect of affairs, their zealous efforts would not be in vain, or overlooked as heretofore, and that, in the terms of the new warrant of May 1st, 1878, their "relative rank would carry all precedence and advantages attaching to their corresponding military rank." On every side, from the General Commanding-in-Chief downwards, their conduct during the campaign has been lauded in the strongest terms, whether for the manner in which they discharged their professional duties, or for bravery in presence of the enemy, and the favourable recommendations transmitted to the authorities at home were neither few nor insignificant.

On the termination of the war, honours and rewards were distributed on a most liberal scale, and C.B.'s and C.M.G.'s were conferred without stint, seemingly, on every department except the veterinary; while promotion for service in the field descended even so low as to conductors of transport.

Notwithstanding the most pressing representations, the services of the veterinary officers have been completely ignored at home, so far as public recognition is concerned. We believe the Veterinary Inspector, who held the grade of principal veterinary surgeon in Zululand, and ranked as colonel, has, after much delay, been offered a good service pension of £50 a-year—the very lowest which could be given, and which is usually that conferred upon the most subordinate officers! This is all the reward and acknowledgment!

It is needless to say that an intense feeling of degradation and discontent, if not something stronger, has been engendered by what is considered most unfair and ungenerous treatment; the complaints at the slight the department has received, if they are not loud, are at least strong and bitter; while the sympathies of the entire army, as is evidenced by the military journals, are extended to the unfortunate veterinary surgeons who are so ungenerously and ungratefully left out in the cold, their claims despised, and their warrant ignored.

We can scarcely think that the treatment the Veterinary Department has received has been prompted by any feeling adverse to it. On the contrary, we are certain that if the authorities only knew how injuriously the invidious distinction they have conferred on it must operate with regard to the public interests, they would hasten to repair the damage and make amends for the oversight.

For many years army veterinary surgeons have laboured most undeservedly under certain disabilities, which have pained them somewhat acutely, but the Zulu war has supplied the crowning and supreme grievance. "It is now evident," say the best and most hopeful of them, "that nothing we can do, either at home or abroad, will remove from us those disabilities, or obtain for us that recognition which is so readily and bountifully accorded to every other department. We may do our very utmost in the field: generals and officers commanding may testify to the value of our services, and the zeal with which we have performed them; recommendations for honours and rewards may be stronger and

more numerous than are given to other officers—but all is in vain: when our hard-earned claims reach the Horse Guards, there they are stifled, and the indignity is thrust upon us of being unworthy of notice. The C.B. and C.M.G. are unsparingly conferred, and even officers at home have received these decorations for their services in regard to the war in South Africa. Surely the Principal Veterinary Surgeon was as deserving as these officers, and certainly the Inspecting Veterinary Surgeon in the field was as worthy as many who were decorated!"

It is impossible to refrain from regretting that such complaints should have any foundation. But it must be confessed that perhaps in no army in Europe are veterinary surgeons more rigidly excluded from such rewards than in our own. No matter with what distinction veterinary surgeons in the British army may serve, they can now have no hope of receiving reward or encouragement—so say the most impartial among them.

This, we confess, is a serious view, and if it is correct, augurs badly for the army; for it appears to be forgotten that veterinary surgeons are not now what they were forty or fifty years ago, and that for the service they are selected not only because of their professional ability, but also for their social qualifications. A slight or indignity inflicted upon the army veterinary surgeons will be felt by the entire profession throughout these kingdoms, and gentlemen will certainly not expose themselves to the risk of degradation or indignity by joining the Department. Therefore the supply of suitable candidates will cease, as in the medical department of the army, until this risk is removed; while those already in the service will feel disheartened, apathetic, and very averse to volunteer or display zeal when this is perhaps most necessary. All this is well known to every one. It is the hope of reward which sweetens labour, and when this reward is withheld, labour becomes insipid.

Every year the Army Veterinary Department increases in importance, and the duties imposed on it are becoming multiplied and serious. The best-educated, and the most trustworthy men the profession can produce are selected for it; they serve in every part of the world, and in every war, and it is recognised by all experienced generals that their services are absolutely indispensable, and are at all times invaluable. But if it be decided that army veterinary surgeons are not to be placed on a footing of equality with those whom they equal in every respect,—so far as rewards, decorations, and other privileges go—that, in fact, their warrant is a dead letter, and their feelings of no moment, then we greatly fear the army, and through it the public, will regret the decision as much as we ourselves do.

Knowing well the spirit which pervades the profession, the difficulty experienced, even before the Zulu war, in filling up the gaps in the Department with suitable men, and the absolute necessity for maintaining this department in the highest possible state of completeness and efficiency, we earnestly hope that this decision is not final, as some consider it, but that steps may yet be taken to remove what the whole body of veterinary surgeons may eventually consider as a most undeserved and unmitigated slight, if not an insult.

A full and fair recognition of the claims of the Army Veterinary Department is as necessary in the interests of the army and the country, as it is in those of the department itself. The day has gone by when these claims could be ignored with impunity.

"SHEEP-ROT" (*CACHEXIA ICTERICO VERMINOSA*).

BY PROFESSOR FRIEDBERGER, MUNICH VETERINARY SCHOOL.

Translated from the "Deutsche Zeitschrift für Thiermedicin," by G. A. B.

[Nothing having been done of late years in this country with regard to the investigation of the so-called "Sheep-Rot"—a disease which has been causing such terrible havoc among our flocks, and to which reference is made in our correspondence columns—we have much pleasure in publishing the following translation by a valued colleague.]

THIS disease prevailed in a flock of high-bred Merino-bred sheep in the months of December and January, and in a short time eight or ten animals died. At the *post-mortem* examination there was noticed a peculiar change in the liver, and a large quantity of fluid in the abdominal cavity. Therefore the owner wished to have the opinion of some competent person with regard to the malady, and consequently sent three of the most severely-affected animals to Professor Hahn.

At my colleague's wish I assisted him in the examination of these sheep, and from the symptoms they exhibited it was quite impossible to form a definite conclusion as to the nature of the disease from which they were suffering. We therefore destroyed one of the animals, in order than an autopsy might be made to assist us in our diagnosis. From this we decided that the malady was due to parasites.

The other two sheep were allowed to live for further examination, and were then destroyed.

SHEEP, No. 1 (Ewe).

The following were the appearances this animal presented on January 31st:—Poor condition; conjunctivæ very pale, and somewhat swollen; ears warm; extremities and muzzle cold; skin white; wool dry and easily pulled out. Heart-beats irregular and 160 per minute, the sounds being indistinguishable. Crural pulse small and quick. Temperature at the rectum, 40·3° Cent.; respirations 36, but easily raised to more than 70 a minute; Schneiderian membrane pale. A little sero-mucus discharge flowed from the nostrils. No cough. Percussion elicited a normal sound in all parts of the chest. The respiratory murmur was sharper than usual, and in places there were rhonchus sounds. The mucous membrane of the mouth was anæmic. The appetite and rumination were diminished. The hinder parts of the body, especially the sides and inferior region, were considerably enlarged; the flanks were retracted. Palpation and percussion in different parts gave the idea that a large collection of fluid was present in the abdominal cavity. The movements of the rumen were distinctly audible. Pressure in the right hypochondrium produced indications of pain. The fæces were normal, no distomata being found in them. The urine was yellow, clear, strongly alkaline, and effervesced when acids were added to it; it contained quantities of chlorides. The animal was weak and dull, did not care to move, and showed very little resistance to being handled. *It was bled to death, and the post-mortem examination was carried out at once, with the following results:—*

Cadaver emaciated, circumference of the abdomen being about one-third larger than normal; subcutaneous abdominal tissue very œdematous; muscular tissue very pale. About twelve quarts of fluid (in which floated some coagulated material) were taken from the abdominal cavity. The liver was adherent to the omentum; the peritoneum was also united to the abdominal walls in various parts by fibrous bands, which contained some freshly-coagulated blood-clots about the size of beans. The liver was tolerably firmly united to the diaphragm. The parietal portion of the peritoneum was slightly opaque and thickened, but easily removed from the underlying structures, and softer than normal.

The thoracic cavity contained about 100 cubic centimetres of a dark-yellow fluid; and the pericardial sac held about a tea-spoonful of clear fluid. The costal pleura was smooth and glistening. The superior mediastinal glands were about one-third larger than normal, œdematous, and highly pigmented; the bronchial glands were similarly affected. The visceral pleura was perfectly smooth, but that portion which covered the pericardium was somewhat reddened from imbibition of blood. The lungs were normal in size, collapsed, and contained air, except in various portions of the smaller lobe, which appeared to be splenified, with the bronchial tubes leading to these parts showing spindle-shaped and cylindrical distentions. The bronchial mucous membrane was perfectly normal, except at these distentions, where it was slightly thickened, and covered with a muco-purulent secretion. The muscular tissue of the heart was soft, but otherwise healthy. Nothing special was observed in the spleen or kidneys.

The mesenteric glands were enlarged, but irregularly so; those in connection with the stomach and small intestines were markedly so, and when cut they presented a moist bright surface, being inordinately juicy and darkly pigmented. The glands of the large intestines were less swollen, and presented their natural reddish-brown colour. No striking pathological changes were discovered in the stomach or intestinal canal; their contents were of a proper consistence; if anything, the mucous membrane was a little pale.

The principal changes were discovered in the liver, which was enlarged about three times its natural size, the right lobe being more affected than the left, the enlargement consisting more especially in thickness, which was easily seen by the truncated appearance of the border.

The lymph-glands situated near the hilus consisted of three highly-pigmented œdematous portions, varying in size from that of a bean to a pigeon's egg. The fibrous pseudo-membrane which covered the liver was thickest on the anterior surface, it was easily stripped off, and under it were found several examples of *Distoma hepaticum* about 5-8 mm. long; similar parasites were found in the peritoneal effusion. In some places the liver capsule was slightly cloudy, in others it was roughened. The surface of the liver was uneven, presenting several prominences, varying in size and colour; and I can compare it to nothing so much as porphyry, it having a dirty yellow to a yellowish-brown ground, upon which were irregularly distributed black-red or dark reddish-brown round lines or stellate spots, which gave one the idea that they were small subserous blood extravasations—or, at least, contained blood; they were about 1-2 cm. long, and 1-1·5 mm. broad. These changes formed part of the prominences, in whose centre a grey oval or elongated body could frequently be seen. On dividing the capsule, a bloody fluid (or one resembling blood) escaped from the surface of the liver, and with it the above-mentioned grey bodies, which appeared to be incompletely developed *Distomata hepaticum*, some being only 3 mm. long, and others twice that length. A great number of these parasites lay immediately under the serosa, and were surrounded by a very small quantity of blood; others seemed like points, and appeared to be placed perpendicularly in the subserous tissue,

with their end towards the serous membrane. When the serous membrane was carefully divided, it was possible to extract one of these *Distomata*, whose length measured 8-12 mm. One example only had pierced the membrane, and projected above the serosa, so that it was possible to extract it with the forceps. Its length was 6 mm., when the serous membrane and the parasites were removed from the surface, there were small cavities seen in the liver. On the anterior surface of the liver there were several prominent uneven spots about the size of a halfpenny, of a dirty orange colour, surrounded by a highly-injected ring. The gall-bladder was tolerably filled with a dark olive-green bile, in which neither parasites nor ova were found. The consistence of the liver resembled flesh, and was soft when cut, except in isolated places—especially in the left lobe, which was firm; the hyperplasia of the connective tissue was easily seen microscopically. When cut, the parenchymatous tissue of the organ presented a greyish-brown colour, having in places a yellowish-red tint; the central veins were distended by partially coagulated blood, and altogether it gave one the impression of stasis. There were also cavities filled with sanguineous contents, similar to those on the superficial surface of the liver, but less numerous; they contained undeveloped *Distomata*. The yellowish-red parts proved on section to be deep-seated infarcts, which had already undergone degeneration and necrosis.* The mucous membrane of the bilary ducts was swollen and injected, and presented in places (especially at their smallest calibre) ecchymosed spots. Near the hilus a *Distoma* was here and there to be found. Towards their peripheral ends the ducts were thickened, and contained non-matured as well as numerous sexually-matured parasites. On opening the portal vein, we found a newly-formed thrombus about 4 cm. long, and 1 cm. thick in the left branch, upon which was a half-developed *Distoma*; other examples were removed from neighbouring branches of the veins. The thrombus extended into some of the other branches toward the hilus. In the right branch of the portal vein small thrombi were also seen branching into the smaller lateral vessels.

SHEEP, No. 2.

The "*status præsens*" on the forenoon of January 31st, was as follows:—Body tolerably well nourished; conjunctivæ yellow-red colour; surface temperature equable; muzzle dry and warm; skin a rosy-red colour; yelk secreted in small quantity; wool moderately firm; pulse 104, and full; heart's beat easily felt on the left side, and sounds audible at same level. Internal temperature at rectum 40.2° C.; respirations 22, but easily accelerated by the least excitement; a slight serous discharge from nostrils; appetite diminished; rumination irregular, and only performed for a short time at long intervals. Circumference of abdomen normal; peristaltic action audible; no pain on pressure applied to the region of the liver. Fæces normal, but upon close examination a few Distomata were found. Urine dark yellow, clear, alkaline, and effervesced upon the addition of an acid; non-albuminous; contained chlorides, but no biliary colouring matter. The general appearance of the animal was still good, and its movements free.

In the evening the pulse was 96; temperature 40° C.; respirations 36.

Feb. 1.—*Morning*, pulse 88, irregular; temp. 39·7° C.; resp. 22-30. Feeds a little better and ruminates; livelier than on the previous days. Fæces normal. *Evening*, pulse 80-84; temp. 30·5° C.; resp. 20.

Feb. 2.—*Morning*, pulse 84; temp. 41 3; resp. 38-48; but short and more superficial. Appetite worse. Rumination less frequent. Peristaltic action

* By the aid of the microscope, we were able to detect excessive regressive metamorphosis of the hepatic cells, and *detritus*, as well as some living rods of the *Bacterium termo*.

audible. Urine strongly acid, and containing no albumin or biliary colouring matters, but rich in phosphates. The animal is lazy and offers little resistance to being handled. *Evening*, pulse 32; temp. 41·7° C.; resp. 36.

Feb. 3.—*Morning*, pulse 90; temp. 41·5° C.; resp. 36. Seems much the same as yesterday; pressure in the hypochondriac region gives no pain. The animal was becoming more emaciated, and we killed it by bleeding.

The autopsy showed the abdominal cavity to contain a few tea-spoonfuls of a slightly-reddened turbid watery fluid, which contained some small blood-clots and fibrinous coagula. Parietal layer of peritoneum normal. Specimens of the *Cysticercus tenuicollis* were in the mesentery. Thoracic cavity held about an ounce of slightly bloody fluid. Pleura natural Lymphatic glands of mediastinum slightly enlarged; lungs of proper size, pale red, and pervious to air, with exception of a small portion about the size of a hazel-nut at the posterior end of the sharp border of the right posterior lobe, which was splenified. There were tolerably hard miliary nodules, consisting of a gelatinous material with calcareous concretions, in the subpleura and in parts of the parenchyma of the lungs. Pericardium normal, as was also the epi- and endo-cardium, with exception of some small ecchymosed spots about the size of pin-heads in the left ventricle. Lacteal glands enlarged, and when cut across and pressed a quantity of whitish-yellow turbid fluid oozed out. Nothing abnormal was detected in the stomach and intestines; spleen normal, with the exception of a few sub-capsular hæmorrhagic spots the size of a pin's head; kidneys the same; bladder empty.

In this case the liver was the principal organ affected, and presented similar lesions to the last case. It was about one-third larger than it should be, the right lobe being slightly covered by a thin and easily removed fibrous coagulum; but this was somewhat more abundant on the left lobe. Parasites were neither found in this pseudo-membrane nor in the effusion in the abdominal cavity. Lymphatic glands at the hilus were œdematous and swollen. Surface of liver irregular, uneven, and roughened; left lobe particularly gritty and granular to the touch, of a brownish-red colour, flecked with spots of orange-red, dirty greenish-brown, and black-red; capsule showed whitish-grey thickenings, which in places were slightly shrivelled, and beneath them were prominent calcareous concretions that projected beyond the surface of the organ—three being the size of a sixpence, the others the size of millet-seeds. The dark-red spots were due to blood extravasations under the serous covering (as in Sheep 1, but much more extensive); gall-bladder tolerably full; the bile resembled tinct. iodidi in colour, and contained few of the parasites' egg. Liver tissue moderately firm, and crepitated when cut; the left lobe was distinctly sclerosed. On the cut surface were observed lacunæ of various shapes and sizes, with smooth walls furnished with trabeculæ filled with a reddish-brown, often slightly grey pulp, in the centre of which an incompletely developed *Distoma* was usually found. The pulp-like contents were easily pressed out, and were found to consist of white and red blood corpuscles, with some fatty degenerated hepatic cells. The degenerated spots were surrounded by distended vessels, and small bright-red coloured blood effusions, the largest of which harboured some free particles, which were distinguished as remains of hepatic cells and connective-tissue fat. The connection between these degenerated spaces and the bile-ducts or the blood-vessels could not always be traced. On a tranverse section being made, some of the spaces were seen to be filled with a dirty olive-green or brown pulp, tinged with green matter, which could be pressed out in clots resembling the shape of the vessels. In these, we also detected some young *Distomata* about 4-5 mm. long, as well as white and a few red blood corpuscles and *detritus*, but very little remains of hepatic cells (in some places we saw collections of a granular rusty-yellow pigment). There can

be no doubt that these spots were enlarged, degenerated, perforated, and destroyed bile-ducts. When the hepatic duct was opened at its entrance into the duodenum, we found two sexually-mature parasites; others were also found in the duct itself. The mucous membrane presented all the appearance of being affected with a violent desquamative purulent catarrh; in places it was studded with hæmorrhagic spots, and the enormously thickened walls were in patches surrounded by large extravasations of blood. Fully matured flukes were rarely to be met with, except at the hilus and periphery of the liver, but immature ones were tolerably plentiful, though not situated under the serosa, as in Sheep 1. Several of the middle-sized hepatic ducts were distended with nests of three or four flukes, but there were no signs of rupture of the walls or degeneration of the surrounding tissue. Some of the peripheral branches of the vena portæ, especially of the left lobe, were plugged with thrombi, which projected in a conical manner into the larger branches, but no parasites could be discovered here.

The hepatic cells were highly granular, and had undergone fatty infiltration and degeneration. Heaps of mixed cells, fat globules, and fine granular *detritus* was seen. The connective tissue had undergone various grades of hypertrophy.

(To be continued.)

HUMAN AND ANIMAL VARIOLÆ: A STUDY IN COMPARATIVE PATHOLOGY.*

BY GEORGE FLEMING, F.R.C.V.S., ARMY VETERINARY INSPECTOR.

THE recent conference held in London on Animal Vaccination will not have been without a useful result, if it has been the means of not only drawing attention to this particular subject, but also to the very meagre knowledge we seem to possess with regard to Variola in animals, and, indeed, of all animal disorders which are communicable to mankind, and *vice versâ*. The discussions which took place at the meetings of the conference afforded another proof of the necessity of instituting what I have for years maintained should form a branch of medical study—a chair of Comparative Pathology at each of our medical schools. Surely a knowledge of animal diseases, in their relation to those of our own species, is of far more moment to the surgeon or physician in the practice of his profession, than an acquaintance with zoology or comparative anatomy. Such chairs are established in nearly all, if not all, Continental medical schools, in which their value has long been recognised. Why is it, then, that we are so slow or so unwilling to adopt what is so manifestly and so urgently required in order to complete the student's education, and to render him a more useful and enlightened member of society?

From the opinions expressed at the conference, as well as elsewhere, I gather that the view is largely entertained among medical men in this country, that human and bovine Variola, or Vaccinia, are one and the same disease: the latter being dependent for its origin and maintenance upon the former, though undergoing a certain and special modification in the passage of its virus through the organism of the ox; so that, when re-transplanted in the human species, it is no longer Small-pox, though it offers protection, partially or wholly, permanently or temporarily, against an attack of that malady.

It would also appear to have been accepted by those present at the conference, that there are only two distinct kinds of Variola—one affecting man, and

* Reprinted from the *Lancet* for January 31st.

the other the sheep. And one opponent of animal vaccination, in dwelling upon the dangers likely to attend that operation, pointed out the existence of several diseases which, he asserted, bovines are liable to, and which he would lead us to infer might be communicated to those vaccinated direct from the calf. Among the diseases he enumerated were Contagious Pleuro-pneumonia, Anthrax, Glanders, certain disorders due to helminths, and "Entozootic Asthma."

Now, without at present claiming to be a supporter of animal vaccination, I may as well state that the apprehended danger from these disorders is more or less purely imaginary. Contagious Pleuro-pneumonia is peculiar to cattle, and cannot be transmitted in any form to other species, not even by direct inoculation of its morbid products; Glanders is not a bovine disease, and all attempts to convey it to the ox tribe have invariably failed; Anthrax runs its course too rapidly, and is too marked a disease to be considered in connection with animal vaccination; the worm disorders have no relation to the subject under discussion; while as for "Entozootic Asthma," why, I never heard of it before, and I fancy nobody else, so that it may also be dismissed as unworthy of consideration. Candidly speaking, if I anticipated any danger in animal vaccination, from the presence of constitutional disease in the vaccinated calf—which I do not at present—I would rather be inclined to look upon the existence of Tuberculosis with some suspicion; but this serious malady the speaker did not refer to. There is, however, no evidence that it can be conveyed to mankind by retro-vaccination; and, to my mind, the risk is so infinitesimal, considering that the calf is so rarely affected with the disease, at least in an active form, that I think it may not be taken into account just now.

Of infinitely greater importance is the relationship between human Small-pox and Cow-pox, which was treated as a merely collateral subject at the conference, but was, nevertheless, made the occasion for some strong opinions being expressed as to the absolute identity of the two maladies. The solution of the problem as to whether Small-pox and Cow-pox are one and the same disease, modified only in their manifestations by differences in the organism of man and the ox, or whether they are distinct and independent disorders, having only a family or generic resemblance, well deserves the most serious efforts; constituting, as it does, a question of the very highest scientific and practical interest, and one about which there should be nothing speculative. Its practical aspect more particularly invites examination, for if it be demonstrated that the two are identical, the Cow-pox, being derived from Small-pox, then there is no occasion to hesitate as to the selection of vaccine lymph; for we might, without compunction, take that which is directly elaborated in cows through inoculation with the Small-pox matter of man, and thus save all the search and precautions at present imposed upon us in order to obtain a vaccine fluid which shall be innocuous, and at the same time sufficiently potent to afford protection from Variola. But if, on the contrary, the Small-pox communicated to the cow retains all its characters, and when again transferred to mankind merely reproduces itself in its dangerous, general eruptive and highly infectious form, then recourse to variolo-vaccination would be a serious and reprehensible step, and one which should be opposed. Or if the Small-pox virus, in passing through the cow, should still retain its Variola-producing attributes, but yet become so subdued as to be as harmless, and still as effective as vaccine, ought it to take the place of the latter altogether, or should it be employed simply as an auxiliary? These questions have been asked before, and I venture to ask them again, as a reply to them is of the greatest moment at this particular time, not only in regard to Small-pox, but to other virulent affections. For if, notwithstanding the apparent differences in their characters, the human

and bovine diseases are the same in nature, the virus only being beneficially modified or transformed by transference from the one creature to the other, it gives us reason to hope that the virulent principle of other contagious scourges which only attack once in a lifetime, may be similarly attenuated by emigration from one species of animal to another, and still retain its protective influence. But if the human and the cow disease are due to a different virus, and the one has power to neutralise the other, the reciprocal neutralisation being greatly to the advantage of the creatures concerned, then also there is good reason for hoping that with other contagious maladies of the same, or even a different type, there may be discovered a similar means of destroying their germinative power.

Notwithstanding the immense importance of the question, the long time that has elapsed since vaccination was introduced, the multitude of works upon the diseases, and the great opportunities that have been afforded for clinical and experimental observation, it is indeed astonishing to find opinions still divided on the subject of human and animal Variolæ and their relationship. Strange it is to note doubt and hesitation, and unfruitful discussions as to the nature, advantages, and dangers of vaccination, when we reflect that it has been practised for ninety years, and is universally adopted all over the world as a prophylactic against one of the direst of the pestilences which haunt the human family.

But so it is; and, as before observed, the tendency among medical men, at least in this country, appears to be in favour of Small-pox and Cow-pox being due to one and the same virus; in opposition to the Jennerian doctrine, that the Cow-pox was derived from Horse-pox, and had none but an antagonistic relationship to human Variola. Their belief seems to be founded on the reports of certain experiments performed by four or five persons (Gassner, Thiele, Sonderland, Badcock, Ceely), in which positive results were obtained some forty or fifty years ago, and on accounts of a few instances in which Small-pox was said to have been communicated from sick people to animals. Jenner, according to this opinion, was mistaken; his Cow-pox was not derived from "greasy-legged" horses, but from the Small-pox-stricken people who went about and handled the milch cows, and so infected or inoculated them. It follows that only cows were (and are now) affected; that Cow-pox was much more prevalent in those days than now, because Small-pox was more prevalent; that only mankind and sheep have a distinct Variola of their own, for the simple reason that those who entertain this opinion never saw or heard of any other species being affected with Variola; that failures in recent attempts to produce Cow-pox, by inoculating cattle with Small-pox virus, and the production of Small-pox when the matter of the eruption was transferred from the cows to children, were due to the human virus being merely deposited in a little pouch in the animal's skin, where it did not undergo the supposed modification; and that, though all recent experimenters have failed in developing Cow-pox from Small-pox, yet at the period mentioned it was accomplished without difficulty.

Deeply impressed with the vast importance of arriving at the truth in such a grave question, I have for many years devoted much attention to it, and have already done what in me lay to settle it: at least so far as the Variolæ of animals are concerned, as will be seen on referring to my work on "Veterinary Sanitary Science and Police" (vol. ii., p. 28); and I will now venture to dispute every one of the arguments brought forward to prove that human Variola and Cow-pox are due to the same virus, or are the same disease; or that there are only Small-pox and Sheep-pox as distinct Variolæ. With regard to animals, I may at once state that I believe every species has its own independent and particular kind of Variola, and I am unable to understand why man and the sheep should alone have the unhappy privilege of being

the special subjects of different forms, and this privilege be denied to all the other creatures.

Whether these forms may have been originally derived from a common or primitive source or type, I will not now stop to inquire ; but that they exist and compose a group of diseases rather than one malady, cannot be matter for doubt. That they more or less widely differ from each other, that in each species each form has a special character, and though that which is particular to one species may be transmitted to another species, yet the Variola of this species need be scarcely a subject for dispute ; while the fact that their differences are marked, not only with regard to their particular features, but also as to their capability of transference to other species, and their antagonism to each other, has been clearly demonstrated. Admitting that which I shall presently attempt to prove, that the cow has its own Variola, we know that when this is communicated to man it does not produce Small-pox, though it protects from it. The Sheep-pox has been inoculated on man by many experimenters—among others, by Marchalli, Sacco, Voison, and Hering, but only a small localised group of pustules, quite unlike the eruption of ovine Variola, has appeared at the seat of inoculation, and no protection from Small-pox or Vaccinia has been conferred. Neither human Variola or yet Vaccinia will give rise to Sheep-pox, neither will their inoculation protect the sheep from its own Variola. Horse-pox is communicable to the cow and mankind, and protects them from their Variolæ, as well as the human species from Vaccinia, while vaccination protects the horse from its Pox. As we shall see immediately, though the virus of human Small-pox, when deposited in the skin of the cow, does give rise to a local papulation—often very trifling, exceptionally very marked—yet this is not the regular eruption of Cow-pox, either in its appearance or course, and it does not prevent the cow being successfully vaccinated at the same time, though it appears to destroy the aptitude to receive Vaccinia ; while in two or three transmissions through the bovine species it becomes altogether impotent. The same results are observed in the horse, which, however, appears to receive the virus of human Small-pox more readily, and to exhibit more marked local phenomena than the ox ; while this inoculation also protects it partially, if not entirely, from the action of vaccine virus, which it otherwise so readily receives. As in the ox likewise, the Small-pox virus soon loses its potency in being carried from one animal to another—it cannot be cultivated in them ; and experiment has demonstrated, that no more in the organism of the horse than in that of the ox can human Variola be transmuted, but that after passing through the bodies of solipeds, and again transferred to man, it has lost none of its characteristic features.

Cow-pox can be very readily transferred to man, the ox, horse, and goat, the first three showing an equal aptitude for its reception ; in them also the transmission of the disease is indefinite—*i.e.*, the virus may be cultivated, without impairment, for a limitless number of generations, and it confers immunity against the Variola of man and the horse, while the ox itself is protected. But while vaccination only produces in man and the ox a local and limited eruption, in the horse it often produces a startling pustular exanthem, which, in character and seat, differs in nothing from natural Horse-pox. Another peculiarity in the action of the vaccine virus in the horse is its tendency to produce this vaccinal eruption, and at the same time to confer immunity, when introduced directly into the lymphatics or blood-vessels ; while in the ox it does neither under this condition—all circumstances which would lend support to the opinion of Jenner, that the horse is really the true source of natural Vaccinia.

Vaccination in the dog usually only produces small red nodules at the punctures, but nothing at all resembling the vaccinal eruption. It is the

same with the pig. In the sheep a small papule generally forms at the seat of inoculation, with rarely a little vesicle that rapidly becomes encrusted. Re-vaccination from this to calves gives negative results.

Not only in their special characters do the Variolæ of man and animals differ, but also in their apparent mode of extension. Human Variola and Sheep-pox differ widely from each other in some respects, particularly in their not acting antagonistically, and in the appearance of the eruption, but they are identical so far as their diffusion is concerned. They are both infectious and contagious, and can be transmitted by fomites, as well as by actual contact; while their virus possesses a vital resistance somewhat remarkable. Cow-pox, Horse-pox, and the Variolæ of other animals would appear to depend for their dissemination upon their contagious properties only, and their virus readily becomes deteriorated.

There are other peculiarities in the Variolæ of man and animals which still further differentiate them, but these I shall not allude to here; so pass on to the consideration of the far more pressing question as to the identity of Small-pox and Cow-pox, and an examination of the arguments brought forward in support of this identity. But before doing so, I may as well confess that I do not for a moment hold with the abiogenetic or "spontaneous" origin of Variola either in man or beast, and am prepared to maintain that whenever and wherever, and in whatever species the disease manifests itself, it is always due to its own special contagium, no matter how this may be conveyed.

(To be continued.)

ABORTION IN COWS.

BY H. V. STOCKFLETH, PROFESSOR AT THE COPENHAGEN VETERINARY SCHOOL.*

AFTER reading the interesting article by Professor Frank, published in this journal (*Deutsche Zeitschrift*, etc.), upon the contagious nature of abortion in cows, I thought the following remarks would be interesting. Although I am aware that it is difficult to give a satisfactory explanation of this accident, and that it is easy for one to launch out upon the very treacherous paths of supposition, yet I do not think there are sufficient reasons to prevent one from stating his own views. This, with the consolation that I am not the only one who is liable to mistakes, and possessed of the conviction that, by indefatigable inquiry (in which every one should take his share), leads me to hope that we shall finally arrive at an amicable decision upon this question.

Abortion was, and is still, very much feared by farmers; but they, unlike veterinarians, do not distinguish any difference between abortion which takes place before two-thirds of the usual period of gestation is over, in which case the young are always dead (*abortion*), and that which takes place after this period, in which the fœtus may be so far developed that it is in a condition to be born alive, and to live (*premature birth*). This division, however, is without practical value, and we find that both accidents are due to the same causes; for when one occurs in a cowshed, we generally find the other takes place also among other animals in the same shed.

We often find that "slipping calf" is effected in a very short space of time, and that it happens without any premonitory signs. As a rule, however, we generally find the *labia vulvæ* swell, the tail is raised, and the cow commences to strain, and in a few minutes the young one is found lying behind

* Translated from the *Deutsche Zeitschrift für Thiermedicin*, by G. A. B.

her. If the fœtal membranes are expelled with the fœtus, or shortly afterwards, all will be well; but if they are retained, they may cause more or less disturbance through decomposition. At other times the cow suffers considerable disturbance from non-relaxation of the external generative passages and os uteri, etc., which leads to retention of the fœtus. In such cases the cow will require assistance, which, as a rule, is not difficult to render. I have found several times a small fœtus held quite firmly in the os uteri, and I once found, in a cow that had shown signs of calving for fourteen days, a large fœtus fixed tightly in the vagina.

Many days, and even weeks, may elapse between the separate cases of abortion in the same herd, but it often occurs in several animals at the same time. Eletti* reports a case where eleven cows aborted out of fifty-five in one day. The casual appearance of any febrile disease may cause abortion, as I had occasion to experience in Copenhagen in 1852; for instance, it frequently follows Foot-and-Mouth Disease. But cases occur more often, and isolated cases follow each other more rapidly now than was ever experienced from that disease. It may so severely attack a herd that natural births become the exception instead of the rule, and when such cases do occur they often succeed each other for several years.

We have no fixed rule to guide us as to the time the cow may be expected to abort. Young cows are generally the first to abort, when they are from three to four months gone; the older ones aborting about the seventh or eighth month of gestation. Once a cow has aborted, she is very liable to abort her next calf also, and we have instances where cows have "slipped their calves" several times in succession, and even three times in the course of the year.† If a cow has aborted several times in succession, but received good attention, food, etc., in the intermediate period, the rule is that each abortion takes place later than that preceding it. Zundel says upon the matter, that if a cow carries her first calf six months, she would probably retain the next to seven or eight months if she received better nourishment, etc., than before, and the third would probably be delivered at the natural time, or very close to it. The truthfulness of this view is, however, very doubtful, for abortion is not exclusively due to the modes and customs of feeding, etc.

Abortion may occur under all circumstances—in the meadow or stall, in young or old, and in emaciated or well-fed cows; it may be either confined to one farm, or to one neighbourhood, or it may disseminate itself far and wide. In this part of the world, it is generally confined to one or more farms, in which several years may pass without a case occurring, and then it commences again with its former virulence. It does, however, under some unfavourable circumstances become more extensive; for instance, in the cold, wet year of 1852 it was very prevalent in South Germany, and in 1872 it was quite common in eastern and other Prussian provinces.

The great loss which attends abortion is that of the milk. If no other unfavourable symptom appears, the cow may soon be put to the bull again; but if the fœtal membranes have not been got rid of, the cow will, as already mentioned, become affected from their decomposition, and the desire for the bull will not appear before they are all expelled, and the uterus free from any decomposed and dead materials. The fertility of the cow may be lost, in which case she loses flesh, the milk secretion ceases, and she often pines away and dies; but if animals recover after the membranes, etc., were retained, they are very likely, for a time at least, to abort again, and in this

* Repertorium der Thierheilkunde von E. Hering. 22-34, nach Giornale di Veterinario. Turin, 1862.

† Ueber ein enzootishes Verwerfen von Dr. Zundel. Tidskrif. for Veterinairmedicin of Fr. Sundberg. Stockholm, 1872.

way lead to great loss of money and time, and cause great trouble to their owners.

The organic union between fœtus and mother generally ceases some time before the symptoms of abortion show themselves; therefore, when a cow shows premature labour pains, we may generally say the fœtus has been dead for some time; and therefore we need never hesitate in assisting, rather than preventing, the expulsion of the fœtus and its membranes. From this it will be seen that all our endeavours must be directed to prevent the causes of abortion; but before this can be brought about, we have first to solve the difficult question, What are the causes? This is very difficult to answer, inasmuch as it is next to impossible to prove the precise cause in any one case. Still, by seeking the foundations which have given rise to the doubts, prejudices, susperstitions, etc., concerning abortion, and by noting all causes which can or are likely to cause abortion, we shall be starting with knowledge which will enable us to arrive at some definite conclusions. In the following I shall endeavour to point this out to you, without, however, claiming that I have repeated all which is known upon the subject; and hoping that others will also render their assistance in solving this question, for opinions and experience from various sources are always beneficial in elucidating truth in such matters.

We will commence with what has received but little attention—viz., the examination of the peculiar relations, in the cow itself, which favour abortion.

It is not so very singular that abortion takes place in milch cows, if we consider the frequency with which they give birth to young, viz., one every year, whilst in other animals this is exceptional—but besides giving birth to a calf, it is also requisite that they should give a large quantity of milk—or, perhaps to put it better, in order to have a cow which is always in profit (milking) we seek to have her calve regularly once a year. We must look upon this circumstance of milking pregnant cows to be a cause of abortion, since the uterus and mamma are normally so closely connected, that when one is active the other is inactive and *vice versâ*. In animals whose gestation is short, such as dogs, the uterus remains dormant whilst the animal is suckling her young, and only renews its activity when the young are so far advanced that they can live independent of the mother and lactation has ceased. On the other hand, when the period of pregnancy is of long duration, as in the cow, mare, etc., we find that œstrum returns soon after giving birth to their young. The cow, however, is generally allowed the bull three months after calving, and lactation generally ceases about six months after becoming pregnant, and the young has to seek other means of sustenance. The glands gradually become inactive, and recommence their function shortly before giving birth to the next calf. This natural process is completely altered in dairy cows, for we find the calf removed from the mother directly after birth, and commence giving the cow food with the object of obtaining a larger quantity of milk, and put her to the bull as soon as possible, continuing to milk her so long as the gland secretes. In this manner there is a struggle set up between the function of the mamma and uterus; the function of the latter is thus artificially held in check, and abortion is the result. The zealous attempt to develop the milk secretion to the highest degree causes a complete change in the manner of living, and the animal is used for breeding purposes long before it has developed itself. It is a generally known fact that we allow the cow to calve a second time before she has arrived at three years old; therefore, it is evident that the first calf must have an influence upon the mother's growth, and what is still worse is, during the second pregnancy the young mother is artificially fed and the secretion

of milk forced as much as possible, whilst she is still growing, as well as having to nourish the fœtus in her uterus. It can be easily understood that the fœtus, under such circumstances, is not sufficiently nourished, and therefore abortion is the consequence, and as a rule whilst the embryo is still young, the cow having been only a short time pregnant for the second time.

(To be continued.)

SIR FREDERICK FITZWYGRAM'S ANNUAL PRIZES.

THE examination is intended to take place in the week after the Easter examination of the R.C.V.S., 1880.

The competition is open only to members of R.C.V.S. who have obtained their diploma within twenty-five months of the date of the Examinations, and who passed with "great" or "very great credit."

The prizes are three in number. The first is of the value of £50; the second, £30; the third, £20.

The competition will consist—1st, of a written, and 2nd, of a practical and *viva vôce* examination, on subjects pertaining to veterinary science.

1,200 marks will be assigned to the first part, and 600 marks to the second part.

In the first part the marks will be assigned as under:—

Anatomy, 300; Physiology, 300; Pathology, 300; Chemistry, 100; Botany, 75; and Materia Medica, 125.

The time allowed for the written examination will be as under:—

Anatomy, 3 hours; Physiology, 3 hours; Pathology, 3 hours; Chemistry, 1½ hours; Materia Medica, 1½ hours; Botany, 1½ hours.

In the second part the marks will be assigned as under:—

Diagnosis of Disease, 200; Shoeing, 100; Examination for Soundness, 200; Selection of Horses for Specific Purposes, 100.

A competitor failing to obtain two-thirds of marks assigned to *any* of the papers in the written examination, will be excluded from the second on *viva vôce* examination. Two-thirds of the marks assigned to each subject in the second part must also be obtained.

The names of intending competitors are to be forwarded to the Secretary of the Royal College of Veterinary Surgeons, 10, Red Lion Square, at least one week before the date of competition.

The first portion of the examination will take place in London for the Royal Veterinary College, and in Edinburgh and Glasgow for the Scotch schools.

The five best competitors in the first or written examination will be selected for further competition in the practical or *viva vôce* test.

This further competition will be held in Edinburgh this year, or in such other place as may be most convenient to the majority of the selected competitors, and at such time as may be notified.

The donor will pay the railway fares of each of the selected competitors, to and from the place at which the practical examination is held.

The exact date will be notified as soon as the Scotch examinations are fixed.

Further particulars can be obtained from the Secretary R.C.V.S.

FELLOWS OF THE ROYAL COLLEGE OF VETERINARY SURGEONS.

IT has been suggested that an annual meeting of Fellows should be held, as is the custom in similar institutions, to be followed by a dinner. We are pleased to hear a movement has already been made, and that it is intended to hold the same in the middle of this month (*March*), at one of the most central metropolitan hotels, of which due notice will be given to each Fellow by circular. We need scarcely add the movement has our most hearty approval and support. We hope to see a good gathering. Fellows who may wish to signify their approval of the same, can do so by addressing "Fellows' Dinner Mover," care of publishers of this Journal.

Proceedings of Veterinary Medical Societies, etc.

CENTRAL VETERINARY MEDICAL SOCIETY.

AT an ordinary meeting held at 10, Red Lion Square, W.C., on December 4th, the President, H. T. Batt, Esq., in the chair—the SECRETARY brought forward some coated horse-balls, left by Mr. T. G. Batt at the previous meeting. The medicine was contained in a double capsule, one part covering the other, and a slip of paper bound round the middle retaining the two halves *in situ*. They were considered an improvement on the usual system of paper wrapping.

The SECRETARY showed the bladder and enlarged prostrate glands of a collie dog, which had been left with him for several weeks as a sort of pensioner. The dog was very aged, and when first received had a very rough coarse coat, with a large patch of bare shiny skin on the back, which the owner hoped might be covered with hair by treatment. The animal gradually wasted away, his appetite remaining good to the last. He was the subject of chronic kidney disease, the urine when passed being yellow and so gelatinous that it passed away continuous, like a cord, the dog frequently losing his balance when voiding it, from the duration of the act. This condition was modified at first, and for about three weeks the urine becoming nearly fluid and browner, by doses of Potassic Iodide given in the drinking water; but it then became as bad as ever. The whole gland after death was found spongy, and copiously discharging thick purulent fluid into the bladder. The kidneys were larger than normal, the right being about double, and both were enveloped in a glistening white covering. As Mr. Moore had a case to bring forward relating to renal disease and calculi in the bladder, also of a dog, he thought this was a good opportunity of submitting his case.

Mr. HUNTING and Mr. STEEL both had had a similar case; in Mr. Steel's the glands were not so spongy.

Mr. FURNIVALL recently had a similar case, but there was retention of urine, and the animal cried out with pain while attempting to relieve himself. Death ensued in about eleven days.

Mr. T. MOORE exhibited some morbid specimens, consisting of the kidneys, bladder, and generative organs of a Scotch terrier bitch, together with some cystic calculi. He believed it was the most extraordinary case of the kind ever recorded in canine pathology. He was first consulted in the early part of June, when a stone about the size of a pea was voided with the urine. In August, seventeen stones were passed, and another single one in October. On November 4th, symptoms of acute suffering were shown, and the patient died next day, after remaining in a comatose state for about four hours. Au-

topsy revealed enlargement and softening of the left kidney, the pelvis of which contained a stone about the size of a pea. The right kidney was considerably less than natural, and also contained a small stone. The bladder, which was somewhat thickened, and eroded on its mucous surface, was very much distended and completely filled with calculi of various sizes, numbering 275, and weighing 365 grains. The two larger weighed 60 grains each. He had not had them analyzed, but surmised they were phosphatic. The healthy condition of the ureters led him to think that they had been formed in the bladder after passing from the kidneys in minute particles. It was curious that the bitch, which was ten years old, had known no symptoms before June, and up to November 4th was in apparant good health, with the exceptions that when out of doors he would frequently assume the micturating position.

Mr. MOORE also brought forward the thermo-cautery (Paquelin's), and demonstrated its use. He said it would be in the remembrance of some present that he had submitted it to the society a few years ago, when its merits were discussed, and published in the Journal, with the proceedings of the meeting. He had not heard of its adoption till he read a notice lately that it was described as a "*new*" method of firing, etc. The Fellows could judge of its easy application ; its cost was less now than then, and he had used it himself since then.

Mr. SHEATHER could testify to the practical utility of the instrument, having used it ever since the occasion Mr. Moore referred to, when he obtained one. He found the platinum blade gave a good sear, deep or shallow at will, and the burnt skin did not adhere to it : the lines could also be made very close, if required.

The instrument received warm approval from those present, and it was intimated that a proposal would be made at the next Council meeting to purchase two or more of them for the use of the Fellows.

Mr. HUNTING then introduced the subject of "Colic" as regards treatment. He defined Colic as a condition dependent on pain in the bowels and unaccompanied with inflammation, but with constipation from fæces acting as an irritant. There were two opposite courses pursued to combat it—the sedative and the stimulant treatment. He treated his cases first with a stimulant, which frequently gave an amount of functional activity to the bowels, often sufficient to remove the obstruction ; failing these mild efforts, he employed aloes and mechanical means to obtain a passage, such as enemas, and in some cases explored the rectum.

Mr. FURNIVALL observed that in chlorodyne, combined with turpentine and linseed oil, he had found for a long period of years a never-failing remedy.

Mr. BANHAM was in favour of linseed-oil, having noticed in certain *post-mortem* examinations where it had been employed, that though the colon, etc., might be firmly packed with food-stuffs, the oil given had mingled with it, and appeared to be mechanically softening it. He advocated "back-raking" also.

Mr. ROWE employed Tincture of Aconite, or the usual carminative agents, and invariably emptied the rectum, occasionally injecting soap and warm water, and submitted the animals to a gallop, with abdominal friction and warm clothing afterwards : when Diaphoresis set in, he found they did well.

The PRESIDENT advocated Chloral, with Nitric Ether and Liq. Amm. Acet. ʒj.

The subject was then adjourned.

Mr. HENRY SURMON, of St. John Street, Clerkenwell, was duly elected a Fellow.

Mr. FURNIVALL intimated his intention of bringing forward the subject

of inoculation of cattle and horses as a means of prevention and cure of certain contagious diseases, notably Pleuro-pneumonia, Glanders and Farcy, at the next meeting.

The meeting then terminated. *Present*, nineteen Fellows and one visitor.

JAMES ROWE, *Hon. Sec.*

An ordinary meeting was held January 15th, the President, H. T. Batt, in the chair.

Mr. HALL BROWN forwarded a *post-mortem* specimen of diseased liver which had been taken from a horse that had been destroyed for broken knees. The animal had been used by a butcher, at Woodford, for six years, and always appeared to be in good health and excellent condition. He also forwarded two enormous kidneys taken from a well-bred horse 15-2 hands high that had been passing blood for a week before it was destroyed.

The SECRETARY drew attention to a hypodermic syringe which he considered extremely cheap, only costing 6s. 6d.

Mr. FURNIVALL exhibited coated horse-balls which he had used for some years; they were prepared for him, and were a saving of labour and cost.

Mr. HUNTING then resumed the subject of Colic, adjourned from the last meeting. He said one thing had occurred to him, and that was, that cold water was frequently looked upon as a cause of Colic; he believed that in all cases of Colic there was a tendency to constipation, but he thought the exciting cause of cold water alone would not produce Colic; it only affected a horse having an empty stomach for a long time. The multiplication of drinking fountains was strong proof that water *alone* did not produce Colic; water was an exciting cause, but not *the cause* of indigestion. He wondered no one had as yet given a name for this disease in a horse; there was a disease very analagous to it in the human subject, he referred to Sycosis, which would be a very good term for the disease in the horse.

Mr. GERRARD said his ideas regarding Colic were very much in unison with those expressed by Mr. Hunting, although he had anticipated a rather different system of treatment from him, as one who had sat so long at the feet of Gamaliel—one of the great masters of this subject. He had fully expected a philosophical disquisition on the action of aloes in the treatment of Colic; for there was no subject that Mr. Gamgee wrote so dogmatically upon as the action of aloes in the treatment of Colic, together with the use of his enema funnel, which he regarded as capable of curing any case of Colic. Indeed, he mentions that he had not lost a case for some thirty years. And those pursuing the stimulant or sedative mode of treatment he rather twits with treating the symptoms of the disease, instead of the disease itself. Colic being essentially a spasmodic contraction of the muscular coats of the intestines, induced by some irritant either in the shape of food or water, the most reasonable mode of treatment was certainly to remove the irritant; but he (Mr. Gerrard) found that if you depended altogether on removing the irritant by purgation you frequently lost your case, from the violence of the symptoms, unless mitigated by a sedative. He could not say, however, that he had been so successful as Mr. Furnivall, even although he had tried his prescription since last night of meeting; for he lost the first case he tried it upon, only it turned out a twisted bowel, so that it was scarcely a fair test. Besides, the administration of chlorodyne to the horse, if it has to be often repeated, is rather an expensive medicine, and this is against its general adoption, unless we could always depend upon its action. He had had the greatest success by the adoption of the stimulant and anodyne treatment, followed up by a dose of aloes if the state of the bowels and other conditions of the patient as to food and water demanded it.

One great objection to the treatment of Colic by aloes was that you

required the patient to be off work for a few days; whereas by the stimulant or sedative treatment you can usually, in ordinary cases, get him fit for work in a few hours, which is a matter of very much importance to your clients frequently.

With regard to the production of Colic by the drinking of cold water, he had frequently found that horses in certain agricultural districts were often the victims of it, from being worked too long without food or water, and allowed to drink at the troughs in the yard when brought in. In Lincolnshire this was frequently found to be the cause of Colic, and even Enteritis, and this from the fact that they worked their horses such long hours, frequently from seven in the morning until three in the afternoon without food or water; whereas in Essex, where a different system of feeding and working prevails, Colic is not so much met with. Under certain conditions of the stomach and intestines, cold water, or even too greedy feeding after long fasting, may produce Colic; and this pathological fact is strictly in keeping with the anatomy and physiology of the stomach and bowels.

He regarded public drinking-troughs in our large towns, about which something was said in this discussion, as either a very great boon or a great nuisance. Looking at them from a philanthropic point of view, they relieve the sufferings of the dumb companions of our toil by frequently allaying their thirst; but on the other hand, he was certain they were one of the greatest means of spreading contagious diseases, such as Glanders, etc., so that their good is neutralised by their evil, and they become, therefore, a positive nuisance. He stated that several cases of this sort had lately come under his notice which were decidedly attributable to this cause. He thought if an opinion were expressed by this Society it might have some effect upon the public mind by warning them of their danger. He thanked Mr. Hunting for bringing the matter before them and giving them some light upon it.

Mr. HUNTING explained that he always treated his cases first with a stimulant, which frequently gives an amount of functional activity to the bowels; the removal of the obstruction was the object to be aimed at; if he could obtain such by the mild treatment he did so, if not he tried the other treatment.

The evening being well advanced, and Mr. Furnivall's subject a lengthy one, it was deferred to the next meeting, and the proceedings terminated.

Present, twelve Fellows and five visitors. J. ROWE, *Secretary.*

NORFOLK AND EASTERN COUNTIES VETERINARY MEDICAL ASSOCIATION.

THE half-yearly meeting of the members was held at the Norfolk Hotel, Norwich, on February 4th. A. H. Santy, Esq., F.R.C.V.S., in the chair. The sister profession was represented by M. Beverley, Esq., M.D.; Charles Williams, Esq., F.R.C.S.; and R. J. Mills, Esq., M.R.C.S. Geo. Fleming, Esq., F.R.C.V.S.; and Thos. Greaves, Esq., F.R.C.V.S., also honoured the meeting with their company, and among the members present were, Messrs. Bower, Whincop, Shipley, Overed, Gooch, Hammond, Smith, Newson, Ellis, Rattee, Butters, Howard, Buckingham, Low, and Auger; and Messrs. Santy, junr., Rattee, junr., and Hammond, junr., were present as visitors.

Letters were read from Sir F. Fitzwygram, Bart., Prof. Pritchard, and others, regretting their inability to attend. The minutes of the last meeting having been read and confirmed, the auditors presented their report, which showed a balance in favour of the Association of £18 2s. 10d. The Hon. Sec. read a communication from the Lancashire Veterinary Medical Association, respecting the ensuing election of members of the Council of the R.C.V.S., and

after considerable discussion it was resolved to support the re-election of the retiring members.

In accordance with a resolution passed at the last meeting, the instruments, etc., purchased at the expense of the Association, for the use of the members, were laid on the table for inspection; these included Miles' casting tackle, ecraseur, spreaders, etc., also Thompson's tooth shears, and Santy's tooth forceps and lever (kindly presented), the use and merits of which were freely discussed, especially the ecraseur, and instances were named in which it was highly spoken of in the castration of horses, the removal of tumours, etc.; and Mr. Fleming mentioned a very interesting case in which he successfully removed (without hæmorrhage) a tumour from the inguinal region of a mare, which weighed 4½ lbs. He recommended in all such cases the skin to be first incised, and the tumour (as far as practicable) to be separated from its superficial attachments before its removal was attempted, which should be done slowly and deliberately, as hæmorrhage would be less likely to follow the operation. The President then requested Mr. Fleming to read his paper on "Tuberculosis from a Sanitary and Pathological Point of View," which important subject was treated by the essayist in a most scientific and exhaustive manner, calculated very materially to assist us in arriving at correct conclusions respecting the true pathology of this hitherto somewhat obscure malady, and also its great importance to the public at large, viewed as a sanitary question.

The conclusions to be drawn from the facts contained in the paper, Mr. Fleming left to the consideration of the Association, but of their importance, to his mind, there could be but one opinion. [Mr. Fleming in the course of reading his paper was frequently applauded.]

The PRESIDENT asked Mr. Fleming whether the disease in Lincolnshire known as "wens," was of a scrofulous or tuberculous nature? In the fenny districts, beasts had frequently large tumours running down in chains by the side of the face and different parts of the body. Professor Simonds, some years ago, said they were of a scrofulous nature, and the people attributed them to the water of the district. During the nine years he had been in Norfolk he had not seen half a dozen such cases.

Mr. FLEMING had no doubt that this disease was of a tuberculous nature.

Mr. BUTTERS mentioned the case of a valuable shorthorn cow which he attended, suffering from a glandular swelling, upon which he performed tracheotomy. Two or three days afterwards the cow died, when he found on examination that an immense abscess had burst, and the pus, passing down the trachea, had caused suffocation. The liver was a mass of tubercles, and also the mesenteric glands.

Mr. SHIPLEY stated that from his experience he believed Tuberculosis to be on the increase. He had seen several cases where there had been great emaciation, with tuberculous deposits about the lungs and pleura, with death, of course, the result. It was not confined to old animals. Many young animals had succumbed to the same disease. With regard to the milk of tuberculous animals, he considered this a serious matter; for animals affected with Tuberculosis frequently give very large quantities of milk, which milk he was satisfied was pernicious and dangerous, and productive of a great deal of mischief.

Mr. OVERED mentioned a case in which he removed a large tumour from the throat of a beast, weighing more than 14 lbs., and on further examination he found in the chest and peritoneum the most striking evidence of Tuberculosis. He had seen other cases of Tuberculosis which very much resembled Pleuro-pneumonia, and in which great acumen and judgment were required in the diagnosis.

Mr. GREAVES stated that hitherto, to his mind, Tuberculosis had appeared essentially an hereditary and not a contagious disease, but from what Mr. Fleming had adduced he could now entertain no doubt of its being contagious. The importance of the subject was shown by the fact that this disease specially affected high-bred and valuable animals.

Dr. C. WILLIAMS remarked that all present had acquired from Mr. Fleming's paper an immense deal of information on a subject of the deepest importance, not only to pathologists but to veterinary surgeons. He had never before heard a more elaborate, concise, and interesting paper, which he hoped would be printed and circulated. Tuberculosis was one of the most important subjects the pathologist had to deal with. When they considered the great mortality that year by year took place in England from this most terrible scourge—and he was afraid that it was on the increase—medical men could not be too thankful to their fellow-labourers in the veterinary profession, who threw light on a subject which had hitherto been a dark spot to them. Mr. Fleming had, he believed, proved his points, that the disease was hereditary, and was communicable by contagion and infection. In the human being Tuberculosis was certainly contagious. It occurred much more frequently in communities living in damp situations, damp being a mortal enemy to man and beast. Mr. Fleming had specially mentioned the valleys of Bavaria, and the President the fens of Lincolnshire, as being productive situations for this disease, and the fact that there had been comparatively few cases on record in Norfolk, might, therefore, perhaps be attributed to Norfolk being higher and drier. This was a matter so important as to deserve the consideration of breeders when building cattle-houses and determining as to their locality.

After some further discussion, Mr. FLEMING replied. He said that the disease was by no means so rare as seemed to be supposed, but was assuming a national importance, as it was very prevalent amongst high-bred stock, and high-bred stock was now coming very much into repute for the improvement of inferior stock. If it made as much progress within the next fifteen or twenty years as it had done in the last, it would become as terrible a scourge as the Cattle Plague. He believed that the virus of Tuberculosis in its nature was like the virus of Hydrophobia. It might lie latent in the animal until some circumstance, some exciting cause, developed it, such as a local injury to a gland, or a slight Catarrh, if the tubercle was in the mucous membrane; but whenever the tubercle was stimulated to growth, then tuberculisation extended throughout the system. Although the disease was more prevalent in damp situations, he did not believe that dampness in itself would produce it. The high-class breeding animals were made more artificial, and therefore the soil was more suitable for the planting of the tubercular matter he did not think that the tubercle was bred in the animal, but that the soil was made more favourable for its reception and growth. They should not allow a cow to be bred from that showed any symptoms of Tuberculosis; and they should also be suspicious if she came from a scrofulous stock. These opinions he gave with all reserve, as he had no wish to be dogmatic.

Dr. MILLS having spoken of the importance of diagnosing the disease while the animal was alive,

The PRESIDENT conveyed to Mr. Fleming, in felicitous terms, the cordial thanks of the members for his kindness in being present on that occasion, and for the excellent paper with which he had favoured them, which, he trusted, would be published in the professional journal, and also in pamphlet form for general circulation, to which Mr. Fleming kindly consented, and expressed his acknowledgments.

A vote of thanks to the President for his able conduct in the chair, and

to the Hon. Sec. for his services, was carried with acclamation, and acknowledged by Mr. Santy and Mr. Overed respectively.

The members and visitors afterwards dined together under the genial presidency of Mr. Santy, and spent a very pleasant evening.

J. D. OVERED, *Secretary.*

YORKSHIRE VETERINARY MEDICAL SOCIETY.

THE annual meeting and dinner were held at the Queen's Hotel, Leeds, on 30th January, the President, Mr. W. G. Schofield, of Pontefract, in the chair. The following members were present :—Prof. Williams, Messrs. M. E. Naylor, James Freeman, Thomas Greaves, W. Edmundson, J. S. Carter, J. W. Anderton, Peter Walker, J. H. Ferguson, P. Walker, R. W. Murdoch, J. Atcherley, J. E. Scriven, D. R. Sowerby, P. Deighton, John Nettleton, and the Secretary. Messrs. Thomas Taylor, W. A. Taylor, T. Hopkin, A. Lawson,—Roberts, Manchester ; Mr. Rutherford, 21st Hussars, and Mr. Sweeting, Wakefield, were present as visitors.

A number of members and friends sent apologies for non-attendance.

Mr. George Hardie, M.R.C.V.S., of York, was unanimously elected a member.

The SECRETARY introduced the subject of the election for members of Council, and after some discussion it was resolved that the Secretary act in concert with the secretaries of the other associations, in order to carry out the election of Prof. Williams as the nominee of the Society. A vote of thanks was unanimously awarded to Prof. Williams for his services in the Council, which the Professor acknowledged in suitable terms.

The PRESIDENT then read the Inaugural Address, and at its conclusion Mr. Greaves proposed, Mr. Naylor seconded, and Prof. Williams supported the unanimous vote of thanks to the President for his able discourse.

At the dinner the usual loyal and patriotic toasts were heartily drunk, and much disappointment was expressed that Professor McCall, of the Glasgow school, had not thought fit to place the preliminary examination of his pupils in the hands of the Council.

WILLIAM BROUGHTON, *Hon. Sec.*

The following is Mr. Schofield's address :—

MR. VICE-PRESIDENT AND GENTLEMEN,—Being the first occasion this year at which I have had the opportunity of meeting so many professional brethren, it affords me very great pleasure in wishing you, though late, a very happy and prosperous new year. Allow me also to thank you for the honour conferred upon me by electing me your President for the current year. My acquaintance with this Society dates back some fourteen or fifteen years, when I had the gratification of attending as a visitor one of its meetings held at Pontefract. I well remember the kindly greeting and cordiality extended towards me by that most genial of men, the then president, the late Mr. McTaggart, of Halifax. I little thought at the time that in a few years I should occupy the position which he then so ably filled. Although many amongst you would have filled this chair with greater credit than myself, yet it shall be my bounden duty whilst occupying this position to endeavour to further the progress of this association, and to carry out the wishes of its members, as far as my abilities will allow me, in an honourable and straightforward manner, and, I trust, to your satisfaction. I must congratulate you on the present condition of the Society, it being, I believe, financially sound, and though, perhaps, not numerically strong, yet wide in its influence and social in character.

The benefits derived individually and collectively by being connected with veterinary medical associations are very many indeed. It is the aim of this and kindred societies to promote the interests and well-being of the profes-

sion generally, harmony and unity amongst its members, to endeavour to open out the, as yet, unexplored parts of the vast field of hidden knowledge in connection with veterinary science, and to be the arena in which its many champions may fight their controversial battles in friendly discussion. Men are never so likely to settle a question as when they discuss it freely; for free and fair discussion will ever be found the firmest friend of truth. Gentlemen, we come here for the purpose of helping others and receiving good ourselves—the older members of the profession to give us the benefit of their large and varied experience, and the younger ones to derive such advice and information as shall fit them to occupy an honourable and distinguished position in the calling they have elected to follow, and be worthy to tread in the footsteps of their talented predecessors. Who are so likely to impart useful information and good counsel as they who have grown old in the profession, they who have witnessed its follies and its failures, its honours and achievements? And although we may never attain their standard, yet by keeping company with them we shall rise above our own—as trees growing in the society of a forest aré said to draw each other up into shapely and stately proportion.

It may unfortunately happen that one member is at variance with another through some real or fancied breach of professional etiquette, some misunderstanding or misrepresentation; yet under the genial influence created by the assembling together of those mutually interested in the same profession, and in the well-being of its individual members, the clouds are dispersed, the grievance forgotten, the bonds of friendship cemented, and a happier frame of mind instituted. Is there one amongst us who cannot attribute to such meetings as these the formation and consolidation of many friendships, or who have not felt the helping hand of a professional brother in many a difficult case? I think we shall all agree that we have gained something; we have acquired some new knowledge, and we shall recall the past day not only without disgust and without regret, but with consummate satisfaction.

The profession to which you and I have the honour to belong is now, I am pleased to say, recognised as one of the institutions of the country, and justly so, for it has the charge and well-being of many millions of animals, which constitute a large portion of the wealth of the nation. It is from the bovine and ovine tribes that our chief food supply is drawn; and from the equine we derive the means whereby a large proportion of the commerce of the country is disseminated, and which also contribute largely to the pleasures and pastimes of the inhabitants. It is therefore our duty, both in the interests of science and the community at large—and need I say for the especial benefit of the animals themselves?—to endeavour by all possible and legitimate means, by scientific research, indomitable energy, perseverance and pluck, to make ourselves acquainted with the causes of disease; and then having acquired that knowledge, to put forth our energies for the better prevention, alleviation, and cure of those maladies to which the dumb creature is liable. Bacon says, "Every man is a debtor to his profession," from the which, as men do of course seek to receive countenance and profit, so ought they of duty to endeavour themselves, by way of amends, to be a help and ornament thereunto. Ours is indeed a noble science, for the objects to be attained are humane, charitable, and benevolent. The structures and functions of the bodies of domestic animals are much the same as in the human being, and the laws which govern the diseased processes in man and the lower animals, and the principles which dictate and guide the practice of human and veterinary medicine, are identical; but in the diagnosis of disease we are placed at a great disadvantage, from the fact that we have to deal with dumb patients. We can elicit no information from them, but are dependent in a great measure on the attendant in charge for the history of

the case, and very scant information you get generally, yet your employer often expects you to tell him the exact cause of the disease or injury to which your attention has been called. How often would cases be simplified but for the groom withholding highly important information, but which, if divulged, might cost him his situation! And, again, how many cases are lost from procrastination, negligence, ignorance, and self-conceit on the part of the owner, or from an utter want of sympathy on the part of the nurse towards his patient!

The veterinary surgeon should be a man of keen perception and of an acute and observant nature, for upon the exercise or non-exercise of such qualities as these mainly depends a correct or incorrect diagnosis, resolution, or dissolution in your patient, and consequently success or non-success as a practitioner.

And let me here say a few words respecting the training of the embryonic veterinarian. A step in the right direction has been taken by the introduction of an extended curriculum at the various teaching schools, and the adoption of a practical examination, which latter should be no dead letter. The matriculation examination is also a necessary adjunct, as a test of the educational attainments of each intending student; and this should be strictly adhered to, for without a good sound education no candidate should be allowed to cross the threshold of our Colleges. Such an education will pave the way and prepare the mind for the reception of the more scientific teachings with which he must hereafter be conversant.

A classical and scientific education, however, is useless, unless combined with practical instruction; and as this cannot be fully imparted, for various reasons, at our veterinary institutions, it is, in my humble opinion, essentially requisite that every veterinary aspirant should be placed for at least two or three years under the care of an experienced practitioner, previous to his entering college. This will prove of great benefit to him, by bringing him in direct contact and association with those animals which at some future time he may be called upon to treat as patients, and will give him a knowledge of their habits and surroundings.

It will also give him an insight into the many and various aspects of the profession, the oddities and peculiarities of individuals who are to be found amongst his clients, and the antique and fantastic theories and ideas of horsemen which require exploding.

Without a lengthened period of practical tuition, it is quite possible, I grant you, for a man to pass successfully his examinations, and to leave the college with his diploma under his arm at the end of the minimum time stipulated by the rules of that college; and yet if his practical knowledge be only of a superficial character, can you expect him to be a clever, useful, and successful practitioner? I say no. The man who shines well in theoretical and scientific knowledge, often presents a sorry appearance in the sick-box. He lacks confidence in himself, tenders his advice with hesitation, is too apt to appropriate the opinions of others (and stablemen are ever ready to volunteer theirs), loses the confidence of his clients, becomes disappointed and discouraged, consoles himself with the idea that he has mistaken his avocation, and finally retires from the scene to seek some less troublous and more genial occupation. I should also like to see such subjects as diet, ventilation, and sanitation more largely dilated upon at college, as these subjects are not only useful to ourselves, but of which many of our employers reasonably expect us to possess a knowledge, and look to us for information and advice thereon.

I think the bridging of the gulf which a short time ago existed between the Royal College of Veterinary Surgeons and the Highland and Agricultural Society is a matter for intense congratulation, as it now enables many able,

worthy, and respected members of the profession, men of good social status, scientific knowledge, and practical experience, who have hitherto held only the certificate of the Highland Society, to procure for a mere nominal sum the diploma of the "Royal": thus removing one great element of discord, and furthering the advancement of that one thing which I am sure we all sincerely desire—viz., Professional Unity. That grand old motto of our corporation "Vis unita fortior," has for a long time appeared to me as an anomaly, but through the vista of futurity I begin to discern the analogy and its realization. And now that this great stumbling-block has been removed, I trust that the question of a penal clause will again come to the front. In looking over a Post-Office Directory of the West Riding of Yorkshire, published about two years ago, I found blacksmiths, farriers, and bone-setters designated as veterinary surgeons. This is a lamentable state of things, and I think it is high time some move was made in the matter. The public are thus imposed upon by men representing themselves as veterinary surgeons, who have no qualification whatever pertaining thereto, and it is a mistake to imagine that the public yet thoroughly understand the radical difference between a qualified and an unqualified practitioner.

Although we may not have much to fear from charlatanry and empiricism, yet it is only natural that we should desire to see our institutions, rights, and privileges protected against spuriousness and bastardy. There are many other subjects of interest to us which might have been touched upon, but as it was my intention to be brief, and knowing that we have amongst us to-day eminent and distinguished members of the profession, who will interest you far more than I am able to do, I shall conclude by earnestly appealing to every individual connected with us to aid and assist in promoting the advancement of our science, to put his shoulder to the wheel; and though impossible by one huge effort to lift the profession to the desired attitude, yet we must by patient plodding, by a "long pull, a strong pull, and a pull altogether," and with a determination to press onwards, eventually reach the long-looked-for goal.

"Let us then be up and doing,
With a heart for any fate;
Still achieving, still pursuing—
Learn to labour and to wait."

MONTREAL VETERINARY MEDICAL ASSOCIATION.

THE usual fortnightly meeting held on January 22nd was unusually interesting. The chair was occupied by Professor McEachran. Mr. Henry Quimby, of Rochester, N.Y., was elected, and Mr. Andrew Metcalf Hudson was proposed for membership.

The first paper was read by Mr. Richard Price, on the death of a horse caused by the too free application of coal oil.

Mr. A. W. Harris, Ottawa, read a very interesting paper on Glanders, in which its contagious nature, incurable character, and communicability from the horse to all animals, cattle excepted, were explained. He also pointed out that not only animals, but men became inoculated; hence this was a disease which claimed the attention not only of veterinarians, as such, but sanitarians and philanthropists should see that this disease was properly dealt with by the authorities, and wherever it occurs the animals should, after proper examination by competent persons, be destroyed. He pointed out the different diseases which might be mistaken for Glanders, and urged his fellow-students to study the disease carefully, as mistakes sometimes occurred by the disease not being recognised, and serious losses entailed by the blunder.

A most interesting discussion ensued, which elicited valuable information.

The Chairman being asked what the law of Canada was with regard to this disease, replied that this disease being a contagious one, was included in the provisions of the "Act to provide against infectious or contagious diseases affecting animals," May 15th, 1879, in which section 2 provides that all such diseases be at once reported to the Minister of Agriculture; and in case of malicious or fraudulent concealment of the existence of such disease, the person so acting is liable to a fine of 200 dollars.

No. 3 provides that if any person keep or graze any animal known by him to be infected by such a disease, in or upon any forest, wood, moor, beach, marsh, common, waste land, open field, or roadside, is liable, on conviction, to a fine of 200 dollars.

No. 4 provides that any person bringing, or attempting to bring, into any market, fair, or other place, any animal known by him to be infected, or labouring under such an infectious or contagious disorder, shall, on conviction thereof, forfeit and pay for any such offence a sum not exceeding 200 dollars.

It will thus be seen that ample provision is made for suppressing and stamping out such diseases.

After the close of the discussion, the following important resolutions were unanimously passed:—

"Resolved, That this Association has learned with pleasure that it is intended by the Council of Agriculture to apply to Parliament during the coming session for a Bill for the protection of the veterinary profession in this province, and that it is the unanimous opinion of this Association that such a Bill is much needed, and will be the means not only of raising the status of the profession, but will prevent much suffering and injury to animals from the ignorant and cruel practices of quackery."

"Resolved, That this Association recognises the necessity for some steps being taken to form a Dominion Association, so that, as a united body, yearly or half-yearly meetings could be held, at which questions relating to the general interests of the Profession could be discussed, and further, that in the opinion of this Association the present disunited condition of the profession, and the want of a Dominion Association is injurious to it, and not only lessens its influence, but retards its progress."

"Resolved, That circulars be issued by this Association to members of the profession in the several provinces, asking them to co-operate in the formation of such an Association, and a meeting be called at the city of Ottawa, at as early a date as will suit the convenience of the majority."

After votes of thanks being passed to the essayists, the meeting adjourned. At next meeting Mr. Brown and Mr. Baker will read papers.

ROYAL AGRICULTURAL SOCIETY.

At the monthly meeting held on February 4th, the Veterinary Committee proposed for the consideration of the Highland Society and the Royal Agricultural Society of England, that each contribute a sum not exceeding £100 towards the prizes and expenses of the examinations in veterinary science; that the written portion of the examination be held at Edinburgh and London simultaneously; and that the examination in practical pathology, in Dec., 1880, be held at Newcastle-on-Tyne; the expenses of the examiners being paid by the Societies, and the second-class fares of the candidates also.

THE ROYAL VETERINARY COLLEGE AND THE PROFESSION.

ON February 9th, at 3.30, the committee appointed by the Governors of the Royal Veterinary College to receive the deputation of the practitioners, attended at the Board-room in the College. The committee were, Lord A. Somerset, Sir Frederick Fitzwygram, Bart., and Mr. Harpley. The practitioners were represented by Messrs. J. T. Lupton, W. Hunting, and Robert Ward. Fellows; Messrs. Helmore, E. Coleman, J. Woodger, Jun., J. Gerrard, C. Sheather, J. and T. Moore, and J. Rowe, Jun., Members of the Royal College of Veterinary Surgeons.

Sir FREDERICK FITZWYGRAM, Bart., occupied the chair. He said the Governors were most anxious to hear the complaints of the practitioners against the present system, rules, and regulations of the College, and to place the institution on a sound footing with them; and with that object they had met to hear what the deputation had to complain of, with a view of meeting them fairly.

The Hon. Sec., Mr. J. MOORE, read a general statement of the grounds of complaint, pointing out that large firms owning a great number of horses only subscribed two guineas for all privileges; among them were several extensive horse-dealing firms and jobmasters. The general explanation of the grievances having been so often discussed in our pages, we need not enter fully into all that was urged by Mr. Moore; but we may state that a petition, containing the names of nearly 300 leading country and provincial practitioners, was presented by him, in refutation of the statement that the movement was only supported by a few uninfluential London members. A very large number of the latter would have been present, but it was resolved to appoint only a small deputation.

Mr. HUNTING, in a very clear and expressive manner, opened the case to the Governors. He said he thought the subscription fee of two guineas should be considered as a donation to a public scientific institution, the same as to a hospital, and that pathological cases should find admission free; but that those who wished to enjoy the advantages of the professors' skill, should pay the same for treatment as they would to a respectable member of the profession. With reference to shoeing, he thought the forge should not be open to non-subscribers, but since he had been there that day he had his doubts about it. However, the charges were certainly too low for a veterinary school. Shoes should be 6s. per set, leathers 1s. each, removes 9d. each, and if only one at a time, 1s. The fees the professors charged were far too low for men *considered* to be at the head of the profession—no member having a fair practice could afford to leave his business for less than three guineas a-day, and indeed those well-to-do for less than five guineas. He thought a professor should charge five guineas, then the public would not object to pay a practitioner three guineas. And he would suggest that when professors went into the country, they should be compelled to give notice of their intended visit to the local practitioner in every instance. He assured the Governors that the practitioners, one and all, had the best feeling towards the College, and desired to do all in their power to assist it to become what it should be, the scientific institute of the profession in England. Considering the responsibility, one guinea should be the uniform charge for every examination of horses as to soundness—examination for nothing was out of the question.

Mr. LUPTON said he thought the Governors would act wisely by making the general scale of fees high, as it would then lead the public to set a *value* on our services; but when a professor, who is *supposed* to represent the highest grade of scientific knowledge, is *valued* at almost nothing, the profession cannot stand well in esteem or elevate itself—the first step

must be made at the College, then the practitioners could fix remunerative fees. The profession was proverbially a poor one, and this was the cause: remove it, and then we advance. The livery of 3s. 6d. was not a hospital charge, it was hardly a livery stable charge. There was medicine, attendant's time on a sick patient, as well as keep; no one could make 3s. 6d. pay. The charge should be 4s. 6d. or 5s. at least. Referring to drugs, he said medicine was sold when he was a pupil there—balls at about 3s. 6d. per dozen; this, he heard, was so now: it should not be allowed. The poor should certainly have gratuitous access to the College. The examination fee should be one guinea, the privilege of having horses examined for nothing should cease. If the subscribers paid 10s. 6d. for each horse examined, it would be a concession to the profession.

Mr. HELMORE spoke of the injurious system of allowing large firms to subscribe, and expressed his opinion that if the fees were raised, the support would be the same, and the funds of the school benefited. He had always made a guinea his fee for an examination, and thought it should be the College charge. He also agreed that the shoeing should be confined to subscribers, and the charges increased.

Mr. WARD mentioned two instances that had occurred to him, as examples of the pernicious effects of the College subscription system on the practitioner and the College itself. Mr. Barley, of Dudley Wharf, saw the *Veterinarian* in his consulting-room, and reading the advertisement, he went to the College, paid two guineas, and now has a large stud of horses attended for that ridiculously small sum. During the Kilburn Show, he had an interesting and tedious case in a valuable cart-horse, which he thought should be sent to the College. He, however, on reflection did not send the case there, fearing the clients, a large firm, might not only subscribe, but be lost to him should he do so. He suggested that members of the profession should subscribe, and have the privilege of sending such cases there, but that no case should be received except certified by a member of the R.C.V.S. as an interesting case for admission. There was a difficulty—he only threw out the suggestion, something might be made of it. He also referred to professors acting as veterinary officers at the horse shows—not scientific, but commercial speculations.

Mr. SHEATHER stated that, even as a young member, he had already experienced the bad effects of the school competition, particularly so from being so near the College.

Mr. ROWE detailed his grievances, and alluded to his attending sick animals at night, then at daybreak finding they had been removed to the College. The shoeing department gave him some annoyance as well. He said he had just obtained a College subscriber, who had tired of the institute; this made some amends for a client in Albany Street, who had recently become a subscriber.

Other members of the deputation spoke of the pernicious effects of the school competition in general, and gave illustrations. The Governors promised that the statements made should receive every consideration; they felt that ground had been established for complaint, and the difficulty was, how to apply a remedy. The matter would be brought before the general committee, and reform would follow. The state of things had been in existence so many years, that it could not be expected complete reform would develop at once, but the best should be done under the circumstances, and this, they hoped, would prove satisfactory.

Mr. HUNTING moved a cordial vote of thanks to the Governors for the courteous manner in which they had received the deputation, and the earnest spirit in which they had identified themselves with the practitioners.

The above is a very brief report of the meeting. It may be added that

some conversation took place about the professors visiting beyond the College and against its rules. This subject was to be discussed by the committee, and also the custom of the professors taking the appointments at the horse shows, etc., as veterinary officers. Mr. T. MOORE also suggested that the fees received at all times by the professors should be handed over to the College treasurer; their stipend should be exclusive of such fees, and the *incentive* to practice being thus removed, the professors would have the scientific objects of their profession alone in view.

Army Veterinary Department.

Gazette, January 23rd.

VETERINARY DEPARTMENT.—Frederick John Short, gent., and Harry Arthur Woodroffe, gent., to be Veterinary Surgeons on probation.

Gazette, February 24th.

VETERINARY DEPARTMENT.—Inspecting Veterinary Surgeon W. Death retires on half-pay.

Most favourable reports reach us as to the excellent services the Indian Veterinary Department is rendering in Afghanistan, and the press of that country is loud in its praise. The *Civil and Military Gazette* of Lahore, in its issue for January 7th, for instance, has the following favourable notice:—

"The Veterinary Department is doing admirable service in respect of the transport depôts at Peshawur and Jhelum. At the former station the depôt hospital for sick animals, superintended by Veterinary Surgeon Skoulding, R.H.A., has over 1,500 under treatment, nearly all of them from Cabul and the intermediate stations. The majority of these animals will be again rendered serviceable. At Jhelum the infirmary contains over 1,200 sick cattle under the superintendence of the principal veterinary surgeon, to whose administrative ability is due the merit of a systematic and energetic working of the department in a direction hitherto untried. Two hundred baggage animals are discharged weekly, on an average, from each of these veterinary hospitals, and returned fit for service, where formerly they would have been sacrificed for want of care, rest, and attention. The campaign has proved that the most unsatisfactory beasts for army transport purposes are the bullocks; they are very slow, easily break down, and are difficult to feed and drive. Foot-and-mouth Disease has shown itself at the different stages, though promptly checked. The bullocks from the southern districts cannot stand the cold of Afghanistan, and the clothing destined for them is in great part useless, from being fitted for the smaller-sized Punjabi bullock. The veterinary staff both at Jhelum and Peshawur should be strengthened; at the former station about 150 animals arrive daily, draughted from all parts of India. Constant inspection is therefore necessary to prevent the introduction of infectious disorders, and the work on the present establishment is extremely harassing."

We learn that the duties imposed upon the veterinary surgeons at the depôts and with the various corps in Afghanistan, are extremely heavy and trying. Nevertheless, they are carried out with willingness and zeal, though there is no prospect of any recognition or reward. The Zulu campaign has afforded ample proof that veterinary surgeons in the army are doomed to official neglect in high quarters, no matter how they may exert and sacrifice themselves. For them fortune has no smiles, and this fact is now being generally recognised among their brother officers throughout the service, who have learned to pity them because of the unfair treatment to which they are subjected. The *Army and Navy Gazette* of February 7th, merits the

thanks of the entire profession for its generous outspoken remarks on behalf of army veterinary surgeons. It says :—

"Principal Veterinary Surgeon Collins, Inspecting Veterinary Surgeon Gudgin, and the officers of the Veterinary Department, command our sympathies, and those of every officer in Her Majesty's army. We all know what alarming reports reached England as to local horse diseases, when first the idea of sending out mounted troops to the Cape was mooted. To the officers of the veterinary staff was entrusted the duty of battling against any epidemics of the nature indicated. They set themselves to work manfully, and under the able supervision of Mr. Gudgin, succeeded in saving the country many thousands of pounds, not alone by the care they took in performing their legitimate duties, but by conducting local purchases, and making themselves generally useful in the field. Yet they return home to find those in power so wanting in all sense of justice as to deny them even the paltry acknowledgment of a C.B.-ship for the officer upon whom fell the charge of the arrangements of the campaign. We cannot think that this is done with the sanction or even knowledge of Lord Chelmsford or the staff of the Horse Guards. If the Veterinary Department is to be considered inferior, socially speaking, to the other departments of the army, by all means take from the officers of the department the relative rank which places them on an equality with those of the other non-combatant branches; but so long as they retain their present position, and are commissioned as officers, they have an absolute right to be treated with the same consideration which is meted out to others. The present head of the veterinary service is an officer who, for many years past, has laboured most determinedly to raise his department in the public estimation. He has, since his promotion, exercised the very greatest discretion in the acceptance of candidates. He will, indeed, have an up-hill task to perform, if the War Office is intent upon doing everything in its power to prevent him from ever realising his wishes, and carrying out the good work he has found it necessary to inaugurate. And no surer means could possibly have been hit upon than the unjustifiable insult to which Inspecting Veterinary Surgeon Gudgin has just been subjected. A more uncalled-for slight was never passed upon a public department, and the prevailing opinion is, unfortunately, that Mr. Gudgin's services have not been unintentionally ignored. If the veterinary officers of the army have any friends, now is the time for them to bestir themselves, for it must be evident that a blow has been cast at the good name of the department which cannot fail to be most injurious in its effects, to still further lower a service which we had every reason to hope would have been raised considerably under the able administration of its present chief."

Colonel Baker Russell, in his Sekukuni despatch from South Africa, mentions "Veterinary Surgeon Moore, who attended to wounded horses on the field with great coolness."

Obituary.

THE decease is reported of Mr. J. J. Bagley, Bridgenorth, Salop, who graduated in 1869; also of Mr. J. Clarke, late of Wem, Salop, who died at Roath, Cardiff, on January 27th, and who graduated in 1861.

On October 11th, 1879, died Harald Viggo Stockfleth, doctor of medicine, and professor at the Copenhagen Veterinary School. He was born in 1824, and receiving his education first at a public school, entered the university of that city. Taking an educational degree there, he studied four years at the veterinary school, and graduated in the first rank. Practising his profession for a few years as Government Veterinary Surgeon, he was finally appointed

as teacher at the veterinary school of Copenhagen. In 1869 he was decorated with the orders of St. Olaf and the Danebrog, and in 1870 was elected a member of the Veterinary Board of Health. In 1879, on the occasion of the 400th anniversary of the Copenhagen University, he received the degree, *honoris causa*, of doctor of medicine. From 1853 to 1876, at the request and expense of the Danish Government, he visited, professionally, Germany, France, Upper Italy, Sweden, and England, and his observations were published in the Danish veterinary journal from time to time. In 1861 and 1863 he published a work in two parts, on chemical veterinary medicine, and recently a most excellent treatise on veterinary surgery.

Stockfleth, as a citizen, scholar, teacher, and man of science, occupied a very high position in his native country, and was a worthy colleague of such veterinarians as Tscherning, Bendz, and Bagge. His early death inflicts a heavy loss on veterinary science, but in Copenhagen it will be most acutely felt. In private, his character was unblemished, and in the words of a friend, he was "ein Ehrenmann durch und durch."

M. Dupont, veterinary surgeon at Bordeaux, died recently, at the age of sixty-four years, leaving 400,000 francs to his native city, Pau.

The death is announced of Dr. Gaddi, professor of anatomy in the Bologna Veterinary School. Also of Professor Chiappero, of Turin, known for his share in the production of Bassi's esteemed work on veterinary medicines.

Parliamentary Intelligence.

House of Lords.—February 19th.

TRICHINOSIS.

LORD THURLOW asked the Government whether it was true that an outbreak of Trichinosis occurred in January last, on board the reformatory school ship *Cornwall*, lying off Purfleet, on the Thames; and if so, how many cases occurred, and what number had terminated fatally; also whether the outbreak had been traced to the use of American or other foreign pork; and, in that case, what precautions, if any, had been taken by Her Majesty's Government to guard against the very serious dangers to which the public are exposed by the importation from abroad of pork infected with this disease. The question, the noble Lord observed, was one of fact, and of equal importance both to consumers and producers of meat, and a great deal of anxiety naturally prevailed on the subject. If it should be proved that the outbreak he referred to had really occurred, he trusted it would be in the power of Her Majesty's Government to state that some precautions had been taken to protect the public, and especially the poorest classes, who were most exposed, from a very great danger, and from which they were practically unable to protect themselves. Last year the noble Duke, the President of the Council, in replying to a question that was addressed to him on the subject, spoke of cooking as a safeguard; but it had been proved by experiments in the United States and in Germany, that a greater amount of cooking than was required for ordinary culinary purposes would be necessary in order to be effectual in preventing Trichinosis.

Earl BEAUCHAMP replied that he was not surprised that the noble Lord had called attention to this subject; but all the information he was able to give in the matter was, that the Home Secretary had instituted an inquiry. That inquiry had not as yet terminated, or at least the report of it had not been delivered. He was unable, therefore, to say more than that the attention of Her Majesty's Government had been directed to the subject.

Notes and News.

MILK OF RUMINANTS.—In all probability there has not been sufficient attention, thinks Dr. Brush, drawn to the differences existing between the milk of animals which ruminate, as the cow, and those which do not chew the cud, as the ass and horse; and he would divide milk into two classes—that which is the product of non-cud-chewing, and that which is the product of cud-chewing animals. The milk of the cud-chewers contains a variety of casein, which, under the action of the digestive process, coagulates into a hard mass. Contrary to the often-expressed belief, he declares that this coagulation takes place in the ordinary process of digestion in the calf. He had one tied up out of the reach of any food, and had it fed with freshly-drawn cows' milk. Half an hour after its meal, he always found it busily chewing its cud. After many inquiries, he has ascertained that the same takes place with the sheep and goat; and from these facts, he is inclined to explain the difficulty often experienced by the human stomach in properly digesting the milk of ruminating animals. The other variety of milk, to which human, equine and asses' milk belongs, does not, under the action of acids, in the same way coagulate into the hard mass that is found in cows' milk, but coagulates rather into small granular or flocculent masses, which are easily diffusible. This would explain why Kumyss prepared from cows' milk is found to agree better with children than cows' milk itself; the Kumyss has been, so to speak, already chewed. In the milk of the cud-chewers there is but a small amount of sugar and a large amount of casein, while exactly the reverse of this is the case with the milk of the non-cud-chewers; and in this fact there is again a reason why the milk of the latter, at least in the case of children who cannot get their natural supply, is to be preferred. It will be remembered that Kumyss is a beverage prepared by the people of Yakutz from mares' milk, and found to be highly nutritious, but that the beverage referred to by Dr. Brush is a product artificially prepared from cows' milk.

WE learn that at a recent meeting of the Roscrea Board of Guardians it was unanimously resolved that, in consequence of the expense incurred by the ratepayers of the union in the inspection of animals affected with "Black-leg," an ordinary disease, which they do not consider contagious, they begged of his Grace, the Lord Lieutenant, to have that disease omitted from the Anthoroid Disease Order.

COMPARATIVE PATHOLOGY IN FRANCE.—Some time ago, Professor, now Doctor, Chauveau, was elected to the post of professor of comparative pathology in the Lyons University. It gives us great pleasure to learn that M. Bouley, director of the French Veterinary Schools, has been appointed to the newly-instituted chair of comparative pathology, in the Museum of Natural History of Paris. He had previously been unanimously elected by the Academy of Sciences to fill the chair of physiology at the Museum, which had become vacant by the death of Claude Bernard; but, notwithstanding, the Minister of Public Instruction appointed M. Rouget to that chair, and only succeeded in averting a storm of indignation by instituting a chair of comparative pathology, into which he placed M. Bouley—greatly to the advantage of veterinary and human medicine, we venture to think.

HYDROPHOBIA IN IRELAND.—Hydrophobia, for a long time an extremely rare disease in Ireland, is now far from uncommon. The *Dundalk Democrat* for February 7th, reports the death of a girl, eight years old, who a month before was bitten in the cheek by a dog. She lived four days after the symptoms of Hydrophobia became developed.

DISEASE AMONG YAKS IN INDIA.—We learn that there has been a serious murrain among those useful bovines of the Himalayas, the yaks—at Darjeeling, owing, it is supposed, to their feeding in too low-lying pastures.

THE FOSSIL HORSES OF CONSTANTINE, ALGERIA.—The French veterinary surgeon, P. H. Thomas, has quite recently published an interesting account of the remains of some fossil horses found in the neighbourhood of Constantine, Algeria. The environs of Constantine are traversed by large and deep valleys, on the flanks of which (so far as an elevation seldom exceeding 600 metres) the stripes of a fluvial-lacustrine pliocene formation lie stratified. These, at their base, are characterised by the presence of a chalky marl, and towards their summits by gritty conglomerates, pudding-stones, and sand. The fluvial-lacustrine deposits contain a somewhat transition fauna composed of some of the larger vertebrates, amongst which two species of horse have been found—one an Hipparion, and one very near to, if not identical with the *Equus stenonis* (Gaudry) of the pliocene of Europe. In the bottom of these valleys, at the base of the steep banks of the larger rivers, turfy deposits are found, appertaining, in all probability, to a recent quaternary period in which a fauna appears—which, though showing some affinities to the previously-mentioned fauna, is more clearly connected with that actually existing. Here are to be found remains of a horse (*Equus caballus*) differing only by a few secondary characters from the actually living African horse; an ass of small dimensions, presenting in its dentition some characters calling to mind the genus Hipparion, which genus had, however, disappeared since the preceding geological period. In the grey marl which immediately lies over the alluvial turf, and which appears to be very recent, there will be found in the lowest strata the remains of horses, horned cattle, and molluscs differing in no way from those of the present day. In a middle stratum, remains of flint weapons have been found (at about 2.50 metres from the surface of the soil); while at about one metre below this surface, vestiges of the Roman occupation are met with.

PHYSIOLOGICAL ACTION OF ARSENIC.—The *Oesterreichisches Landwirthschaftliche Wochenblatt* gives a conveniently short summary of the results of Gies's experiments upon the influence of small doses of arsenic upon live stock. For four successive months he gave it daily to sucking-pigs, rabbits, and poultry, the quantities being 0.0005 to 0.0007 grammes a day for rabbits, 0.005 to 0.05 grammes for sucking pigs, and 0.001 to 0.008 grammes each for fowls. In every case the administration was followed by an increase of weight in the animals experimented on, and also of subcutaneous fat. In young animals there was noted a remarkable development of the bones both in length and in thickness, and the peculiarity was observed throughout that a layer of compact osseous tissue was formed over them in situations where their structure is normally spongy or cancellated. Further, a compact stratum of bone was deposited immediately under the cartilages of the long bones, just as Weigner observed to be the case when he mixed small quantities of phosphorus with animals' food. Gies accounts for the fact that other animals in the same sheds, which were not under arsenical treatment, exhibited similar appearances of the bones, by the hypothesis that the atmosphere in them was impregnated with arsenious exhalations from the breath and the skin of those experimented on; and he showed that the like appearances could be produced at will by confining small animals in pens on the floor of which arsenic was sprinkled. Besides this change in the bones, there was also noticed fatty deposits in the heart, liver, kidneys, and even in the spleen. The young born by animals under treatment with arsenic were mostly dead, and exhibited a remarkable hypertrophy of the spleen, and a commencing alteration in the structure of the bone.

SHEEP-POISONING BY LUPINES.—The *Deutsche Landwirthschaftliche Zeitung* calls attention to the occasional great mortality among sheep in districts where lupines form a part of their food, and chronicles two recent outbreaks in the March Ukrain, in one of which the whole flock of 700 ewes died in two days, while in the other but 100 of a large flock were saved. The matter is at present surrounded with a good deal of obscurity, lupines in decidedly damaged condition being frequently fed to cattle with entire impunity, while in other cases their consumption when of apparently excellent quality is followed by most disastrous effects. In the *Œsterreichische Vierteljahresschrift für Wissenschaftliche Veterinärkunde* appears an interesting account of Professor Dammaun's experiments on the poisonous action of lupines upon sheep, an accident of very frequent occurrence in many parts of Germany, more especially in Silesia, Brandenburg, Saxony, Pomerania, and West Prussia. The professor fed healthy sheep upon hay made from lupines, which was to all outward appearance in perfectly good condition, except only that a few fungi of the Pleospera species were here and there present. This is a circumstance of very usual occurrence, and hay thus affected has been repeatedly employed without any injurious effect. In Dammann's experiments nearly all the sheep thus fed became ill, and most of them died. From *post-mortem* evidence, and from the symptoms exhibited during the progress of the disease, he arrived at the conclusion that the animals succumbed to chronic poisoning, occasioning paralysis of the urinary and gall bladders, and consequent inability to get rid of the secretions in a normal manner. The bladder being thus unduly distended, any urine further secreted was retained in the pelvis of the kidney, causing its dilatation, and leading to general disease in that important organ. Death appeared to be occasioned by Uræmia, or absorption of the materials of the urine into the blood ; the mischief thus set up being aggravated by a similar absorption of the constituents of the bile, owing to the paralysis of the gall bladder. As to the precise nature of the poison that occasioned these effects, and whether it is developed in the fodder itself, or is due to the presence of the fungi observed in it, the professor has not yet been able to arrive at any definite conclusion. He is continuing his researches on these points, however, and we are promised in due time a further communication on the subject.

HOW TRICHINOSIS IS SPREAD.—At the meeting of veterinary surgeons held in Bavaria in the course of the past autumn, some very interesting communications were made on *Trichinæ* as they occur in men, swine, and rats, and on the recent discovery that they are far more common than had hitherto been supposed in these last-named animals. Two cases in point were specially mentioned. In February of last year, seven persons in the town of Hof were simultaneously attacked with Trichinosis, which was clearly traced to their having partaken of the raw flesh of a pig just killed by a private inhabitant. Of these seven patients one died after a six weeks' illness. A *post-mortem* examination revealed an enormous number of *Trichinæ*, both free and encapsuled, in the muscular fibre, and in the contents of the intestines. After this discovery the professional inspection of all swine flesh was introduced in the town, all the butchers agreeing to have it carried out at their own expense. Besides this, a general poisoning of rats was undertaken by order of the police, which led to the interesting discovery that all the rats from the house in which the trichinous pig had been kept and slaughtered were infested with *Trichinæ*, while those in the adjoining houses were perfectly free from them. Only in one house, on the opposite side of the street, which was connected by its drainage system with the first-mentioned one, were the rats trichinous, and here the pigs also were found to be subjects of the disease. In the second case, *Trichinosis* manifested itself in fifteen persons at Bamberg, under the following circumstances. In the beginning of March, 1878, two

large Bavarian pigs were slaughtered at a local hotel, and on a cursory inspection appeared free from *Trichinæ*, a proper microscopical examination not having been made. The hams from these pigs were salted and smoked, and served to various customers in the month of May. A short time afterwards all these persons were seized with a disease the nature of which at first appeared doubtful, but was fully established by microscopical inspection of a portion of muscular tissue removed from one of them by an exploring needle. This was found full of *Trichinæ*. The hams of which they had eaten were by this time all consumed, but an examination of three pigs still remaining on the hotel premises in August showed them all to be trichinous. Later on it was discovered that the son of the landlord had been in the habit of giving rats, which he shot on a piece of land through which the main sewer passed, to these swine to eat; and a number of rats from the same ground having been thereupon caught and examined, it was found that twelve out of twenty-four of them were infested with *Trichinæ*.

ARSENIC IN ANIMALS.—Professor Ludwig has recently (*Wiener Akad. Anz.*) inquired into the distribution of arsenic in the animal organism after ingestion of arsenious acid. The objects he examined were the organs of suicides who had poisoned themselves with arsenic, and of dogs which were poisoned, some acutely, some in a chronic manner, with arsenic. In all experiments it was found that the arsenic accumulated most in the liver, and that in acute poisoning the kidneys also contained arsenic; whereas in the bones and in the brain there was little of the poison. In case of chronic poisoning with arsenic, where death did not ensue, the poison was found to remain (after ingestion was stopped) longest in the liver, being much sooner excreted from the other organs. The results of this investigation are in direct opposition to those obtained by Scolosuboff, who always found most arsenic in the brain.

FISH AS FOOD FOR CATTLE.—M. Thomas Payen has just published a note on a question of considerable interest from an industrial and agricultural point of view. It concerns the transformation into oil and cake of a certain variety of fishes which are found in enormous numbers in the Sea of Azoff, and more especially in the "Mer Putride," into which large quantities of sewage finds its way. These fish, which bear a close resemblance to anchovies, migrate every year, passing through the Straits of Kertch. M. Payen was particularly struck with their wonderful richness in fat, and having often seen them sold at Balaclava at nine francs, or even less, per 1,000 kilogrammes (!), he suggests that a remunerative industry might be created for the purpose of extracting their oil, which is white, clear, and free from disagreeable smell, and converting the residue into most nutritious feeding-cake for cattle.

ANTIQUITY OF THE HORSE ON THE AMERICAN CONTINENT.—Since the original account of American fossil horses given by Leidy, the Eocene strata of New Mexico and Wyoming have yielded two very important ungulates, which have helped to complete the history of the descent of the horse, so well worked out by Professor Marsh. These relics carry back the ancestry of this familiar quadruped to the oldest Tertiary time. The earliest form, *Eohippus*, was about the size of a fox, had forty-four teeth, the molars having short crowns and being quite different in form from the pre-molars. There were four well-developed toes, a rudiment of another on the fore foot, and three toes behind. The structure of the feet and of the teeth in *Eohippus* indicates, beyond question, that the direct ancestral line to the modern horse had already separated from the Perissodactyls. The second of these ungulates, *Orohippus*, is from the Wyoming Eocene, and is evidently next to *Eohippus*, which it now replaces in the line of descent. In size it about equalled its predecessor, but the rudimentary digit of the fore foot has disappeared, and the last pre-molar has gone over to the molar series. Another Eocene equine, discovered in Utah, is *Epiohippus*.

CATTLE DISEASES IN IRELAND.—The return to the Veterinary Department of the Privy Council Office shows a total of sixty-two cases of contagious or infectious disease reported in Ireland during the week ending December 31. Of these, Connaught supplied only one—that one was a case of Pleuro-pneumonia; Munster contributed eight beasts, all suffering from anthracoid diseases; Ulster had four cases of Pleuro-pneumonia, and six of anthracoid diseases; and Leinster swells the total with twenty-three cases of Pleuro-pneumonia, fifteen cases of Sheep-scab, and five cases of anthracoid diseases. The case of Pleuro-pneumonia in Connaught occurred in Ballina Union; Lisburn supplied three of the Ulster cases; Dublin, North and South, and Balrothery, nearly all the Leinster cases of the same; while the Sheep-scab is wholly reported from Edenderry, in the King's County.

Correspondence, etc.

ROT IN SHEEP.

To the Editor of the VETERINARY JOURNAL.

SIR,—I enclose you an extract from the *Northampton Herald* of to-day's date. It speaks for itself. The sentiments contained in it are what I hear daily expressed in this part of the country, where farmers are losing their sheep in vast numbers, or are having them slaughtered, "to save their lives," as the expression is. A large farmer in my immediate neighbourhood informed me last week that he had two butchers at work on his farm, employed in slaughtering and dressing his in-lamb ewes, and that he would sustain a loss of about £600 through this dire disease. All the farmers whom I speak to on the subject tell me the same story with regard to the veterinary surgeons, that the only answer they can get from them is, to "kill the sheep, as there is no cure." If that sort of treatment is to be adopted, no cure is likely to be discovered.

As a subscriber to the VETERINARY JOURNAL, it has been a marvel to me that during the time that this disease of Rot in the livers has been working such ravages among the flocks in the Midland counties, there has been no correspondence on the subject except one letter, that I can recollect, many months ago, or notices of attempts even of treatment and cure of this complaint. Until the veterinary profession will turn their attention to the subject no cure is likely to be found, unless the doctors will kindly come to our aid with their scientific knowledge; but unless that happens, I fear the farmers will have to be content to "grin and bear it." As to it not paying to doctor sheep, I cannot believe that to be the case when the losses are on the present scale of magnitude. I have the honour to be, sir,

Your obedient servant,

Scaldwell, Northampton, *January 24th.* ROBERT SOAMES.

To the Editor of the Northampton Herald.

Drayton Lodge, Daventry, *January 20th*, 1880.

SIR,—As your paper is largely circulated amongst farmers, I wish to make a few remarks respecting the general rot in sheep. I keep a flock of about 600, and I have lost 314 breeding sheep, and now my tegs are going. I sent a liver of one to a celebrated veterinary surgeon at Northampton, and had he examined the liver, and sent me his opinion, I would gladly have paid him a two-guinea fee, but he did not think it worth his notice. I have found it a difficulty to get a veterinary surgeon to go into the diseases of sheep. They say it does not pay; so one of the best sources of a farmer's income is not worth their notice. I mean to say that the present knowledge of veterinary surgeons upon the diseases of sheep is not to the credit of the profession. I have often said to veterinary surgeons, "Why do you not study

the diseases of sheep?" They candidly say it does not answer to doctor sheep. As far as that goes, perhaps the knife is the best remedy; yet, at the same time, I think the profession ought to have a remedy for the rot before this time. I have been a breeder of sheep for forty years, and I think I may say I have had quite an average flock, and I do not spare the cake bill; but here I am losing my flock, and our veterinary surgeons stand by helpless to assist me. . . . . The cattle plague was a dreadful thing to us farmers, but the present rot in sheep is ten times worse. You may go along roads here and you will scarcely see any sheep left; and how we farmers are to pay our rents without sheep, I hope some one with a wiser head than mine will tell. This national calamity ought to have been noticed by the authorities, and action ought to have been taken by some competent body under Government; but all we hear is a sigh from the sufferers from this dreadful pest.

Yours truly,
GEORGE EMERY.

[We sympathise most heartily with the farmers in their many most serious misfortunes, and especially with regard to their losses from diseases among their herds and flocks. As our correspondent and the whole agricultural community will be ready to admit, we have done our utmost to protect them from the ravages of contagious maladies, and in this respect we have been very much in advance of not only public, but even of official veterinary opinion. It has also been for many years a matter for regret that the disorders of the ox, sheep, dog, and pig have not been more carefully studied and taught. But for this there are various reasons. The veterinary schools are private, it may be said, establishments which are not compelled to teach, nor have they the facilities for studying, the diseases of the ox, sheep, and pig. So that students, during the whole period of their study, may, perhaps, never see one of these animals except in the market or slaughter-house. In the next place, it does not pay so well to "doctor" these creatures as horses; and as veterinary surgeons are mortal and must live, they study that which is most profitable. And lastly, they are indeed rarely called in to minister to sheep or pigs. The shepherd is the sheep-doctor, as a rule; hence the professional man has little opportunity, if he had the will and the time, to make himself acquainted with ovine diseases. Medical men have as yet done nothing in devising measures of prevention or cure for animal scourges; indeed, the history of their attempts—as in 1865-6—is not such as to encourage the farmers to seek their aid. With regard to "Rot," we know as much about it now as we did half a century ago; and that goes to show that, like so many scourges, prevention, and not cure, is the object to be achieved. The means of prevention, and also those of cure, are enumerated in all the popular books on cattle and sheep diseases published for the last fifty years. Nothing new of a practical nature has been devised for a long time. The farmers have the remedy in their own hands, if they wish veterinary surgeons to study the disorders of sheep. Unless they and their landlords apply the necessary pressure, this study will never be made.]

"FARMER MILES" AND THE ECRASEUR.

To the Editor of the VETERINARY JOURNAL.

SIR,—At page 36 of the January number of the *Veterinarian* for the current year, I find there is a letter from a G. W. Bowler, M.D., V.S., Cincinnati, Ohio, on the "Castrating Ecraseur." In this letter he claims to know something about me, and also takes the liberty to endeavour to mislead the veterinarians of England by several direct misstatements, which I hope you will allow me to correct, or possibly some might be debarred from using the best instrument made for castration purposes—the ecraseur.

G. W. B. says, "A man calling himself Farmer Miles travels from this country to England, carrying in his coat-pocket one of our old castrating ecraseurs." This constitutes misstatement No. 1. Further, "that he imposes it upon the veterinarians over there as a new invention of his for castrating"—misstatement N. 2. Lower down, he continues, "From that date to the present, I, and also Dr. Jenning, have continued to use it, and have during all these years castrated thousands of animals of all ages without an accident or the loss of a single one," etc.—misstatement No. 3.

G. W. B. also states, "In 1873 I called on Professors Axe and Pritchard, and endeavoured to explain to them the advantages to be derived from the use of the castrating ecraseur." This may be true, for in 1879 Professor Pritchard had a castrating ecraseur like our old-fashioned ecraseurs, and did not use it; but he bought one of my improved ecraseurs. I never owned but one of the *old-fashioned* ecraseurs like those spoken of by G. W. B., and that I was glad to part with at half its original cost. But had I known that any man, or even boy eight years old, could have castrated thousands of stock *without the loss of a single one*, with such a tool, I should certainly have been tempted to keep it at any cost, instead of wasting time and money to improve on it, and get a far more satisfactory instrument.

I am well-known as a practical castrator (and more than that, I do not pretend to) from Maine to California in the U.S.A., and in Canada, England, Ireland, Scotland and part of France; and I think it strange that in the whole of my travels I have never heard of such a good old ecraseur as G. W. B. describes; nor ever even have I heard of the man himself, who apparently has done so much work for so many years.

Wilks' *Spirit of the Times*, New York City, through its veterinary editor, August 22nd, 1877, nicknamed me *Farmer Miles*, and there said, "*There is no man on the continent of America who is worthy of being compared to Mr. Miles in this respect*" (speaking of rig castration). I wonder whether he had ever heard of G. W. B. before that!!!

I have just received, unsought and very unexpectedly, the highest compliment I have ever received as a castrator, in the form of a testimonial on parchment, bearing the signatures of fifteen of the leading veterinary surgeons in Lincolnshire: two of whom are Fellows and thirteen Members of the Royal College, with the following words, "We, the undersigned veterinary surgeons practising in the county of Lincolnshire, having witnessed Mr. T. C. Miles' operations on rigling horses, desire to bear witness to the humane, scientific, and perfectly satisfactory manner in which he attains his object. We also wish to express our approval of his method of casting and securing the animal, and of the instruments he uses in the performance of the operation."

I thank the gentlemen who have signed that testimonial from my heart, and I assure them I feel amply repaid now for the troubles and anxieties I had to undergo in England, in my endeavours to enlighten the veterinarians and stockowners of that country, and I am sure many Americans will gladly join me in thanking them for such a token of respect to an American farmer and castrator. When I was in Ireland, two veterinary surgeons presented me with a very handsome gold watch "in testimony of my ability as an operator upon horses, etc.," and in Scotland and Canada, I have received many testimonials and presents, showing the appreciation in which I have ever been held by my many kind friends and employers. These compel me to trouble you with this letter, in reply to Mr. G. W. Bowler's, and to prove to the English public I am not the impostor he would appear to wish to prove me.

I remain, sir, yours obediently,

"FARMER MILES."

THE ROYAL VETERINARY COLLEGE, AND THE ARMY VETERINARY DEPARTMENT.

To the Editor of the VETERINARY JOURNAL.

SIR,—Many reasons will probably be put forward to account for the very unfair treatment the Army Veterinary Department has experienced at the hands of the Horse Guards authorities, in the matter of rewards and decorations for services in the field. May I suggest one, which I fancy is not far from being correct? His Royal Highness the Field-Marshal Commanding-in-Chief is President of the Royal Veterinary College. That establishment, as the profession has only too good reason to know, degrades veterinary medicine to the lowest level by advertising the large amount of service it will give subscribers for the paltry sum of two guineas a-year, by means of its veterinary staff. If veterinary professors set so little value on their calling and their own services, can we expect the public, the Governors of the school, or its President, to hold the rank and file of the profession in respect or esteem? Assuredly not; and His Royal Highness, being aware of the trumpery value at which the school estimates the profession, by underbidding and underselling its own students, is not likely to take a favourable view of the claims of army veterinary surgeons. *Ex pede Herculem.*

Yours obediently,

February 14th. "FILIUS NULLIUS."

THE RESPONSIBILITIES OF VETERINARY SURGEONS.

To the Editor of the VETERINARY JOURNAL.

DEAR SIR,—In reply to Mr. Lambert, allow me, in the first place, to make it clear that I did not intend to include all in the "sweeping accusation." I am proud to record that I have met, and am acquainted with, many veterinary surgeons who would adorn the ranks of any profession, whether they be regarded as scientific men or gentlemen, and I should be extremely sorry to say one word that would unjustly reflect upon their hard-earned reputation. But is it just to regard me as an "enemy" of my profession, because I dare expose the contemptible conduct of many of its members—conduct that has come under my own observation, and given me as much pain as it would have its boasted friends?

My former letter Mr. Lambert thinks "reckless." Let us look for a moment at the evidence he advances in proof of that assertion. When I hinted that many veterinary surgeons, and some professors, can be secured to supply evidence in legal cases to meet the requirements of counsel, he simply exclaims, "Monstrous!" Peruse the Jurisprudence column of any veterinary periodical, and I fear ample material may be gathered to support my position. I am further charged with recklessness, because I ventured to state my conviction that many members of our profession are destitute of the moral sense, and here is the proof: "We all of us know that no race, even of savages the most degraded, has yet been found destitute of moral sense;" a more reckless statement I have seldom read.

The concurrent testimony of travellers and missionaries is that many races are utterly destitute of this sense. Professor Bain, with whom nearly all advanced thinkers agree upon this point, clearly proves that no race, civilised or uncivilised, possesses a moral sense, except those by whom it is cultivated, and that the standard is a matter of choice. My experience of veterinary

surgeons is, that the cultivation of the moral sense is much neglected, and their standard very low; hence the conduct I complain of in my letter.

As to examinations for soundness, and Government inspection, I could cite many instances in which the confidence reposed in veterinary surgeons by the public and the Government is, to say the least, misplaced. I can see no advantage whatever in concealing these facts from ourselves. They must be admitted before their removal can be hoped for. About the conversation of veterinary surgeons, I should rejoice as much as Mr. Lambert if they confined it to subjects of scientific interest; but when they boast of their dexterity in giving a ball, and other childish details in daily practice, one simply feels disgusted.

I have lived in three different parts of England during the last ten years, and in each I have found the fact of my being a veterinary surgeon created a prejudice against me; and judging from the character of our veterinary representatives in those places, I had *no* reason to complain. It is seldom a veterinary surgeon, as such, will, without other qualifications, be admitted into good society. I have found the profession in a similar condition both in Canada and the United States.

I quite agree with Mr. Lambert's remarks about independence, self-respect, and our own dignity; and also with what he says of witnesses, especially professors, appearing in the box. Our schools are much to blame for the present unsatisfactory spirit that exists in the profession. Ask any student who has been at Camden Town during the last ten years, whether that school deserves to be called a scientific institution, or whether it is merely a "commercial concern."

Whenever our country can boast of a school, the teachers in which shall be scientific men who are removed from the necessity of, and have no desire to engage in practice, then may we look for students who will reflect the spirit of their teachers, and will scorn to sell their honour for a paltry guinea or two.

The latter part of Mr. Lambert's letter is unworthy of himself, and in order to answer it I should be under the necessity of entering into personal matters that would be unpleasant and unbecoming; therefore I leave it untouched.

May I ask our classical friend in the north to read "Middlemarch," and study carefully the character of Bulstrode, and see whether he will learn some lessons that our profession may profitably take to heart—and especially those members of it who, like himself, shrink from exposing its defects.

By the way, the gifted authoress of that work, and who, according to the best critics, portrays the men and women we meet every day with unrivalled accuracy, introduces a veterinary surgeon, and although she does not make him play a conspicuous part, still it is quite sufficient to indicate her estimate of that gentleman's character; and I don't think any profession would feel flattered by making Mr. "Horrocks" its representative.

Faithfully yours,

Newbury, *February 10th*, 1880. J. FRASER.

FALSE PLUMES, OR SPURIOUS TITLES.

To the Editor of the VETERINARY JOURNAL.

SIR,—Some years ago, in a West of England town, a kind of United Benefit Loan and Assurance Society was started, the secretary to which, after *Esq.*, appended the mysterious A.B. What on earth it meant no one

could divine, until one day, at a town dinner, an Oxford graduate was asked its purport. "Oh," he exclaimed, "Asinorum Baccalaureus." This gentleman was much of the same type as the Fellow of the College of Preceptors referred to in your last impression. The following advertisement has appeared lately :—

Royal Dog Infirmary, ..., S.W.

Gentlemen,—I have thoroughly tried your Forage Cakes, and find them extremely useful; they ought to be generally used.

Yours truly,

——, F.V.M.A.L., M.R.C.V.S.

Perhaps, sir, you may assist me in explaining the meaning of F.V.M.A.L. as a prefix to M.R.C.V.S. Is it a genuine degree, granted by a Royal College, or what? I am informed a *penal clause* is to be the next move. Will it not be well, sir, to insert a clause against assumption of false plumes, spurious titles, or fictitious letter appendages, tending to throw ridicule on the qualified? The mystic letters being placed before the well-known abbreviation, the uninitiated may be led to suppose it is the higher degree. It may be so; pray, then, pardon my ignorance, and kindly enlighten me.

Yours obediently,

"CYGNUS."

[We cannot give our correspondent the required information. The mystic letters may stand for everything or nothing. The story is told of a man who to his name appended the letters, F.U.D.G.E. The public smiled, many obtuse people even maliciously grinned; but those who could compose themselves sufficiently to inquire of the learned individual what the letters meant, were consoled with the interpretation—he was a Fellow of the Universal Degree of General Education.]

THE COUNCIL OF THE ROYAL COLLEGE OF VETERINARY SURGEONS.

To the Editor of the VETERINARY JOURNAL.

DEAR SIR,—Now that members of Council can be balloted for by the entire body of the veterinary profession, has the time not arrived when more equitable representation may be effected? Looking at the composition of the Council as it is at present, I find that the Camden Town school has no fewer than four of its teachers and three of its Governors in it. This is a most unequal representation, when we consider the other schools; and it gives the Royal Veterinary College a most unfair, and even dangerous preponderance at times—as the last meeting of Council shows. The objects and interests of that school have rarely, if ever, been in harmony with those of the profession; indeed, they have nearly always been antagonistic. In proof of this, I may ask what any of the teachers have done for many years in advancing those interests which most concern us. They have studiously held aloof from every movement intended to benefit us, and sometimes, if they have not actively, they have apparently passively opposed some of them. With procuring the new Charter I believe they had nothing to do, and not one of them holds the Fellowship degree. These are not the men who should be selected to represent us; and I trust now that the election time is drawing near, the profession will carefully scan the claims of those proposed as members of Council. We should have loyal, earnest, and good men, and I hope we shall get them.

Yours faithfully,

"A NORTHERN READER."

COMMENTS.

ARE there two Richmonds in the field? There is certainly only one W. Going in the register of the Royal College, and he is entered as located at New York; but we learn that there is also a Mr. W. Going, M.R.C.V.S., practising at Cootehill, County Cavan, Ireland. If the latter is the original Mr. Going, it is evident he cannot have *gone* to America; if he is not the true Mr. Going then *go* he should to—well, a court of justice would decide where. It is for the original W. Going to declare himself, and say whether he has a double, or if he approves of discreditable personation.

There appears to be every likelihood of one or two public abbatoirs being instituted in Dublin—a site for one having been already chosen. When will London be similarly favoured? Surely in the interests of the public and humanity, abbatoirs are as much needed in the immense modern Babylon as in Dublin!

TO CORRESPONDENTS.

VIRTUTE ET LABORE.—We believe an Act was passed in 1876, entitled the "Drugging of Animals Act." Any law bookseller will furnish it.

A NUMBER of communications and proceedings of societies are unavoidably held over until next month.

Communications, Books, Journals, etc., Received.

COMMUNICATIONS have been received from G. Kidney, Belfast; J. Wilson, Nantwich; R. Soames, Northampton; J. Rowe, London; W. A. Taylor, Manchester; G. A. Oliphant, Royal Artillery, Afghanistan; J. W. Hill, Wolverhampton; Major-General Fitzwygram, Aldershot; T. Greaves, Manchester; J. H. Steel, London; J. T. Roberts, Long Sutton; Captain Russell, Grantham; "Farmer Miles"; J. Fraser, Newbury; R. Ward, London; T. Barker, London; "Filius Nullius"; J. A. Nunn, Royal Artillery, Afghanistan; G. Mitchell, Melbourne; Mr. J. Treacy, Dundalk; W. Broughton, Leeds; "Cygnus"; J. W. Hill, Wolverhampton.

BOOKS AND PAMPHLETS: *C. Schmidt*, Die Retention der Eihäute und ihre Folgen; *H. Putz*, Ueber Wundheilung; *D. and A. N. McAlpine*, Biological Atlas; *L. Baillet*, Traité de l'Inspection de Viandes de Boucherie; *E. Hering*, Handbuch der Thierärztlichen Operationslehre.

JOURNALS, ETC.: *Revue Vétérinaire; Medical Press and Circular; Lancet; Recueil de Méd. Vétérinaire; Wochenschrift für Thierheilkunde und Viehzucht; Archiv für Wissenschaftliche und Practishe Thierheilkunde; Archives Vétérinaires; Annales de Méd. Vétérinaire; Mark Lane Express; Live Stock Journal; Agricultural Gazette; Farmer; Der Thierfreund; Animal World; Army and Navy Gazette; Repertorium der Thierheilkunde; L'Echo Vétérinaire; American Live Stock Journal; American Veterinary Review; Melbourne Chemist and Druggist.*

NEWSPAPERS: *Melbourne Argus; Illustrated Australian News; Melbourne Age; Freeman's Journal; Lahore Civil and Military Gazette; Army and Navy Gazette; Norfolk Chronicle; Morning Advertiser; Montreal Gazette; Belfast Advertiser; Hastings and St. Leonards Observer; Melbourne Leader; Irish Times; Leamington Spa Courier.*